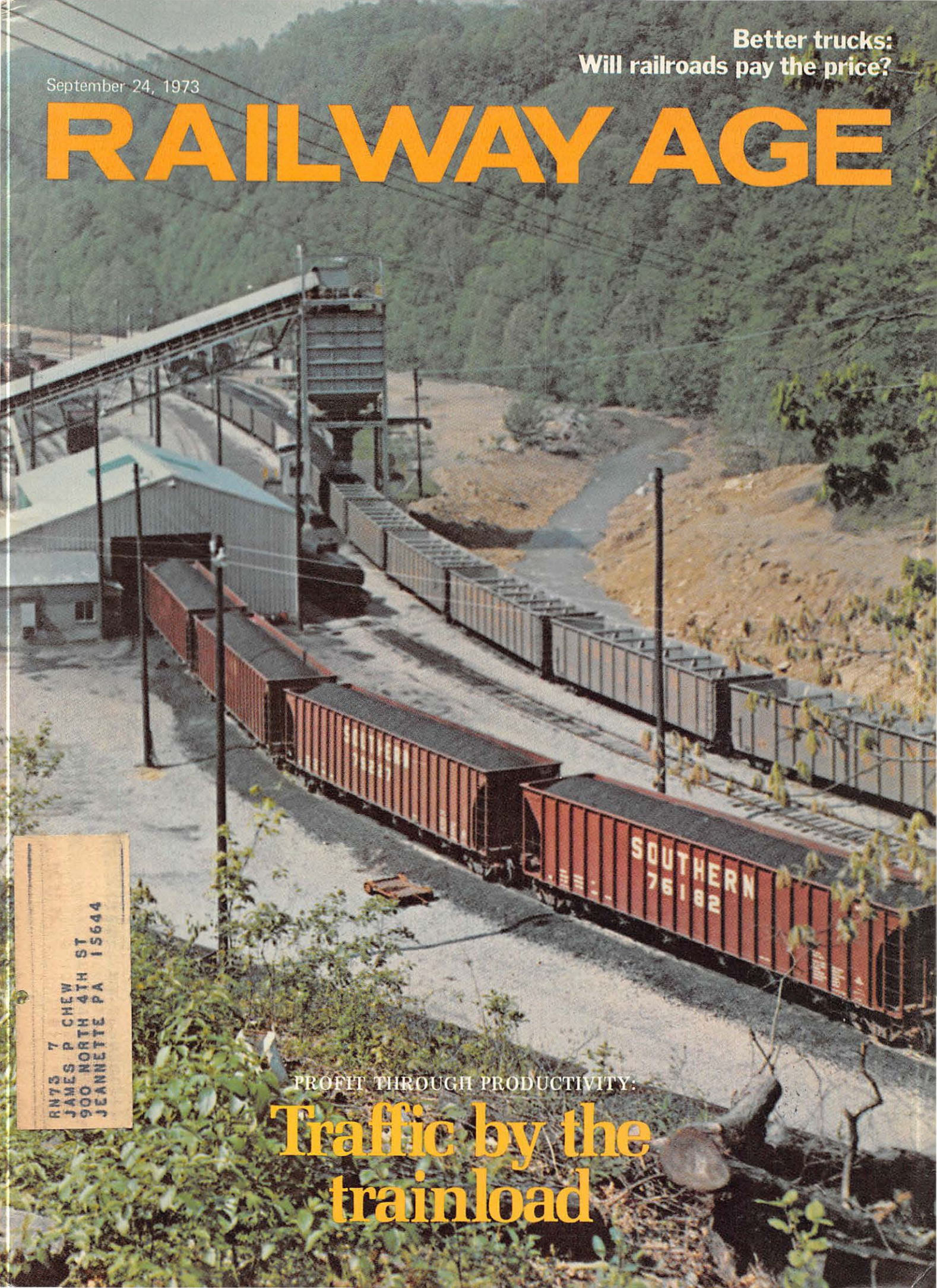
Better trucks:
Will railroads pay the price?

September 24, 1973

RAILWAY AGE



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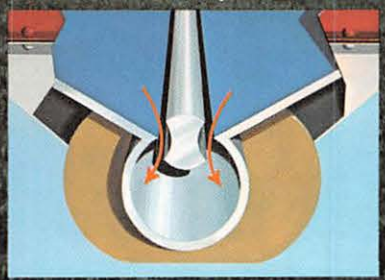
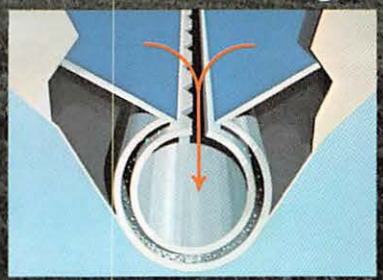
This big, beautiful car has a capacity of 5852 cubic feet—big enough to qualify for the most economical shipping rates. The cylindrical body, MCA recommended 45° minimum hopper slope angle plus the exclusive Double-Groove Gate offers easy sampling—no contamination—fast, trouble-free unloading and turnaround! And, because it's built specifically for long-term leasing, it's built to last with an absolute minimum of maintenance or downtime.

Only North American has it... and it's available for leasing now!

The inside story on our exclusive Double-Groove gate



New Double-Groove gate



Traditional "tube within a tube"

North American Car's all-new single piece double-groove valve element feeds from both sides with simple flow rate adjustment . . . permits easy sampling . . . allows complete unloading with no accumulation of residue to cause possible wedging, binding, or next load contamination . . . requires much less "muscle" than other systems because the valve mechanism is independent of the load transfer connection . . . compatible with any 6" vacuum unloading system . . . universal probe available for smaller systems. One demonstration will show you that the Double-Groove gate is a significant improvement over previous systems.

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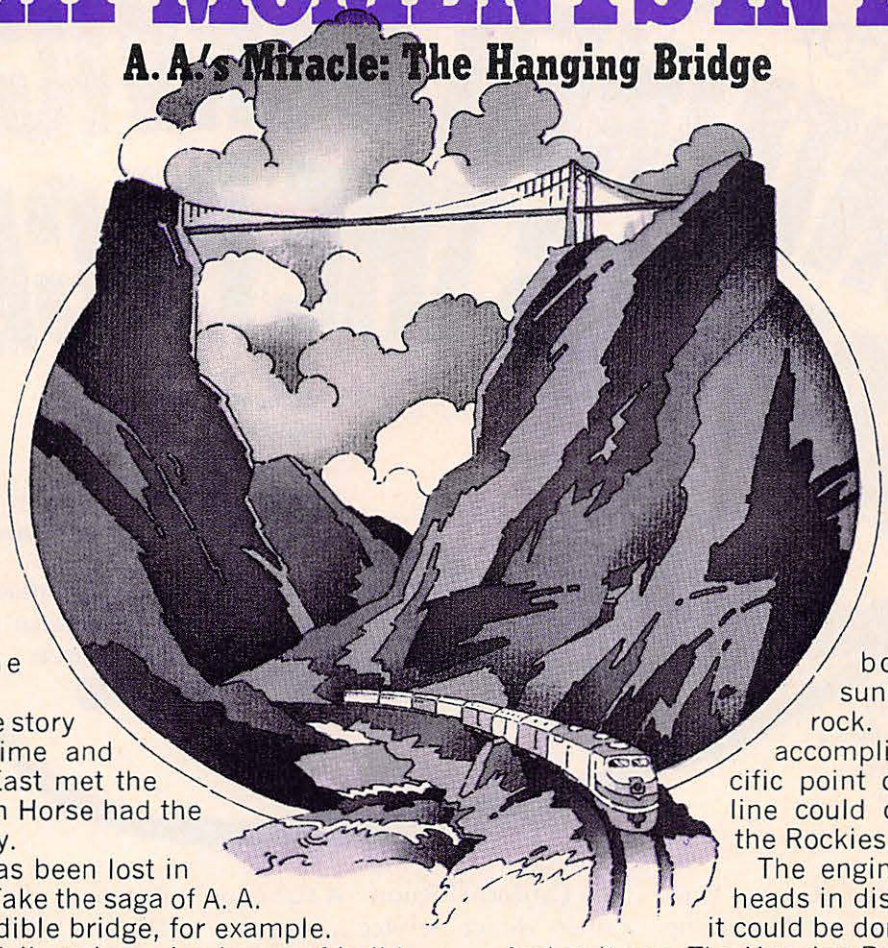
GREAT MOMENTS IN RAIL

A. A.'s Miracle: The Hanging Bridge



Remember the Golden Spike?

You should. The story has been told time and again. How the East met the West and the Iron Horse had the run of the country.

But so much has been lost in the storytelling. Take the saga of A. A. Robinson's incredible bridge, for example.

A. A. was the civil engineer in charge of building a 9½-mile rail line across, through, over, or around Royal Gorge, one of North America's most prodigious chasms. Perpendicular walls. Raging cataracts below that make the Niagara Gorge look like a placid stream.

The torrents of the Arkansas River prevented the use of piers. Going around the obstacle was impossible, too; the maximum gradient had already been achieved. Tunneling? Negative. A. A.'s project was running low on funds as it was. Plus, the public was clamoring to get an east-west link fast.

It was after days of intense thought that the idea finally hit A. A.—"*Hang* the bridge across the ravine!"

Robinson immediately asked his bosses for a surveying study. He wanted to know if it was possible to cut a 12- to 18-in. path in the face of the cliff to support iron girders. The rail would then be suspended from the girders and secured to the cliff face by bolted brackets sunk deep into the rock. If this could be accomplished at one specific point of the gorge, his line could continue through the Rockies.

The engineers shook their heads in disbelief, but, "Yes, it could be done."

And so it was. The Hanging Bridge was erected. And though it had to be restored and beefed up a number of times to accommodate heavier trains, A. A.'s miracle bridge still hangs over Royal Gorge.

L. B. Foster Company makes the miracles today.

A. A. Robinson's bridge is just one example of how ingenuity can solve a delicate rail problem. Since that day when the golden spike bit the tie, technology has conquered thousands of tough, once-impossible-to-solve problems.

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Circle 3 on coupon page 57

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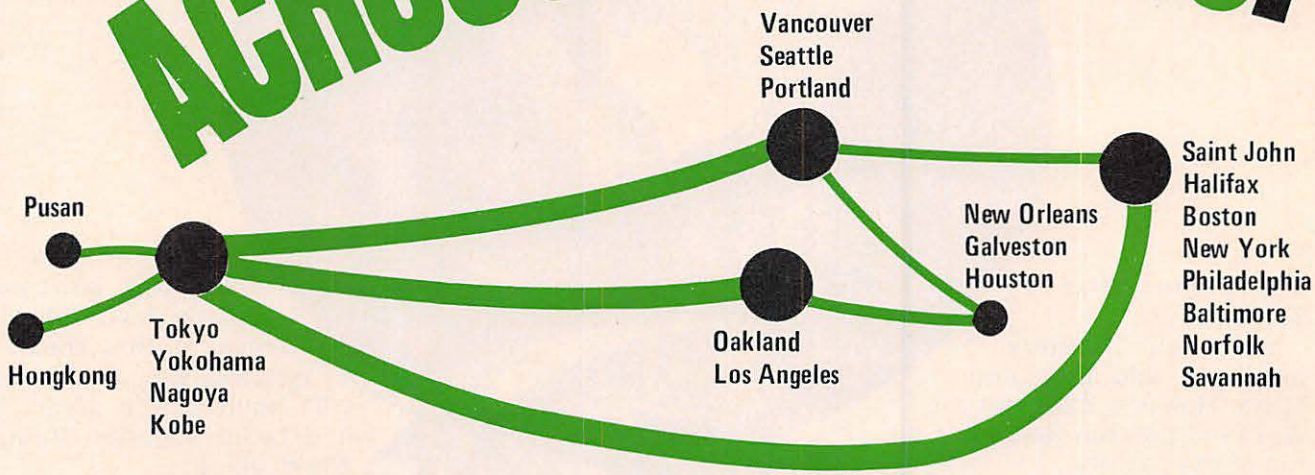

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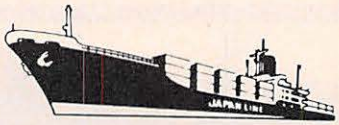
And 2 full-container feeder routes: they connect Kobe in Japan with Pusan in Korea and Hongkong.

We can tell you more about our excellent service — so let us know about your special container shipping project, and we'll take care of it. In a very personal manner, as always.



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Inside

LUTHER MILLER

PROFITS BY THE TRAINLOAD

The great thing about the "house trailer," when it began to seize the public fancy back in the '30s, was the ease with which it could be moved (usually, behind the family flivver) over the nation's highways. Today, the house trailer has become the mobile home—and it is just that: a cumbersome, though comfortable, home-on-wheels that is moved by professional drivers, with increasing difficulty and at increasing cost, over increasingly congested highways. Up until a few weeks ago, despite the difficulties involved, mobile homes did move virtually 100% by highway. But no more.

The U.S. Department of Housing and Urban Development, which wanted to move to permanent storage areas a number of mobile homes that had been used by victims of last year's tropical storm Agnes, turned to the Penn Central for help. In an experimental move, 25 of HUD's mobile homes were loaded onto flat cars and moved more than 900 miles, from Horseheads, N.Y., to Granite City, Ill. It was, said Penn Central, "the first unit train of mobile homes in history"—but not the last. A second unit train left Mechanicsburg, Pa., on Sept, 1.

PC sees a great future for mobile-home unit-trains. Says PC: "We can move 50 units 900 miles while consuming about 5,400 gallons of fuel compared to the nearly 7,400 gallons needed for 50 trucks."

PC's mobile-home experiment is only the latest success story in a glowing new chapter in the history of railroad freight haulage. Dozens of commodities are now traveling by unit train, and the list grows almost weekly.

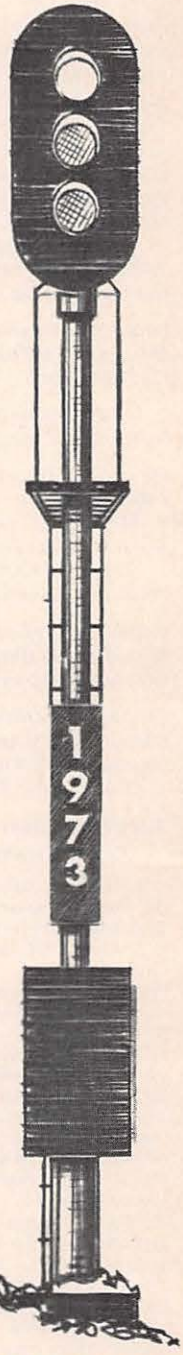
The findings of Railway Age's recent unit-train survey are reported in this issue's cover story (p. 22). Senior Editor Gus Welty put a series of questions about unit trains to the operating railroads—the big one being, "But do they really make money?" What Gus found out suggests that this story could have been entitled not "Traffic by the Trainload" but "Profits by the Trainload."

SAME STORY, DIFFERENT PERSPECTIVE

Business Week's Sept. 8 special report, "The railroad paradox: a profitless boom," did a good job of telling the immensely complicated railroad story to an important audience. We have just one quibble. BW said, "The full depths of the industry's collapse were demonstrated this year when the railroads tried to carry two years' grain crops in one year. . . ." We prefer Federal Railroad Administrator John Ingram's version of that story. He told the recent RPRA meeting: "The railroads have done a magnificent job in the movement of. . .more than half a million cars of grain. . .almost half again as many cars as were moved with grain in the previous year." He added: "It is just this kind of story which really needs to be told. . .somehow, we are just not getting through." Indeed.

This Christmas send...

Christmas Cards of Trains



Full Color Scenes by Famous Train Artist Howard Fogg

These rich 5" x 7" cards recall old days, old times and old friends through the finest of Howard Fogg's works. All cards have a story of the scene inside featuring place, date and train identification. Cards can be printed with your name inside and your address on the deluxe white envelopes. Extras included. Try our "Full Throttle Service" from now 'til Christmas!

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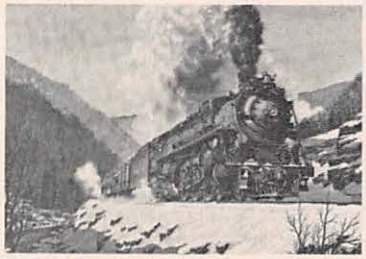
T852 Frosted Steam—Merry Christmas and a Happy New Year—**Trio of Rio Grande K-36 three-footers on Cumbres Pass, Colorado**

T807 Pride of the Northwest—Merry Christmas and Happy New Year—**Mountain type, Great Northern locomotive in western Montana.**

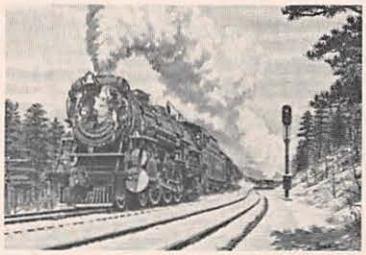
T610 Holiday Local to the North Country—Peace and Good Will at Christmas and through all the New Year—**Boston & Maine Pacific type**

T611 Here Comes the Chief!—Christmas Greetings and Best Wishes for all the Year—**Santa Fe Chief on Glorieta Pass, eastbound**



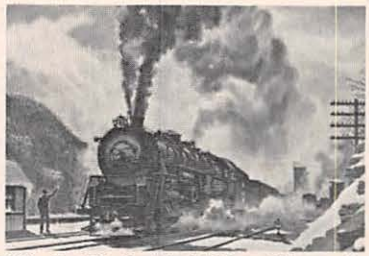
T612 The Lackawanna Rolls East—With every Good Wish for Christmas and the New Year—**Hudson type locomotive out of Scranton**

T810 The C. & S. On Top of the World!—Happy Holidays and Best Wishes for the Coming Year—**Jaunty narrow gauge between Denver & Leadville**



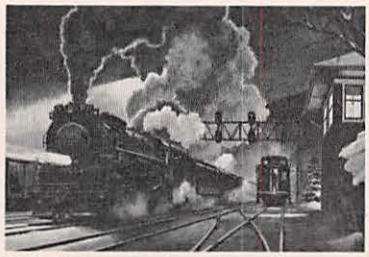
T405 The Crescent Limited—Christmas Greetings and Best Wishes for all the Year—**Southern Railway Engine #1401**

T509 Fresh Trees and Full Steam—With Best Wishes at Christmas and through all the New Year—**"Mogul" narrow gauge**

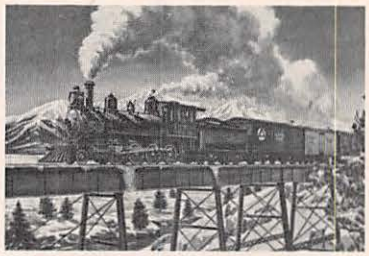


T809 The Erie Fast Freight From Chicago—May there come to you this holiday Health, Happiness and Friendships—**Erie Railroad's Berkshire Engine**

T808 The Wabash Cannonball—Best Wishes at Christmas and Happiness through the Coming Year—**Colorful engine rolling in the Indiana countryside**



T406 Christmas Eve in the Yards—May the Spirit of Christmas Abide With You, etc.—**Chesapeake & Ohio Kanawha type engine**



T224 Headed for Trout Creek Pass—Merry Christmas and Happy New Year—**Colorado Midland, South Park in 1890**

MONEY BACK GUARANTEE

HOW TO ORDER: Write in total quantity and dollar amount remitted in proper spaces. Mix and assort at no extra cost. Order all of one kind or as many of each as desired. Fill out coupon or order by letter and mail with check or money order. Add postage and handling fee to price of order. Canada residents remit in U.S. dollar values. Colorado residents add 3% sales tax. California residents add 5% use tax. No C.O.D. Thank you kindly!

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RAILWAY AGE

SEPTEMBER 24, 1973

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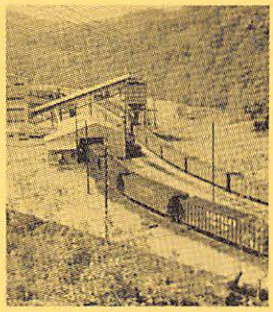

COVER
General Coal Co's transloading facility at Appalachia, Va., is pictured in this scene recorded by a Southern Railway photographer.

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Short and Significant

AMTRAK WITHDRAWS TRAIN-OFF BIDS

Amtrak has decided to continue to operate the New York-Kansas City "National Limited" and the Chicago-Miami "Floridian" pending further studies of ridership and "investigation of alternate service patterns." In withdrawing its petitions to discontinue the two trains, Amtrak told the ICC that ridership had increased during the summer months, though losses continued to be high. The ICC had earlier ordered Amtrak to continue operation of the trains at least until Dec. 2 pending its own investigation (RA, Aug. 13, p. 46).

DESCH ELECTED CHAIRMAN AT RI

Rock Island Vice Chairman and Chief Executive Officer Theodore E. Desch is now chairman and chief executive, succeeding Peter Kiewit in the chairman's post. William J. Dixon continues as RI's president.

C&NW SETS A STOCK-OFFER PRICE

Assuming that the ICC approves Chicago & North Western's proposed 60-for-1 stock split, a new offer of Class A common will be made to employees at a price of $11 per share (RA, Aug. 27, p. 8; Sept. 10, p. 8). When the initial stock offer in the employee-owned company was made in May 1972, the stock carried a price of $50 per share. The $11 price thus works out to $660 per pre-split share.

GREAT DANE TO BUILD A NEW PLANT

Great Dane Trailers, Inc., will build a new $7.5-million production plant in Brazil, Ind., about 50 miles southwest of Indianapolis. The facility is scheduled to be in operation in early 1975. The plant will produce the Great Dane line of van-type trailers. Brooke Reeve, Jr., Great Dane president, said that when the new facility is in full operation it will increase the company's production capabilities by a substantial margin.

RECONSTRUCTION BEGUN ON ALBERTA LINE

Reconstruction is proceeding along a 37-mile washed-out section of the Alberta Resources Railway in Canada, between Grande Cache and Grande Prairie. Heavy rains in June 1972 caused the Smoky River to flood, which knocked out the northern section of the railroad. Canadian National, which operates the railroad for the province, estimates that repair costs will be about $8 million, of which $1.2 million will be paid by the province. Work is expected to be completed by the end of 1973, with full operation resuming early next year. The southern section of the line, still operating, carries coal from McIntyre Porcupine's Grande Cache mine to Vancouver, B.C., mostly for export to Japanese markets.

CP TEAM TO STUDY TURKISH RAILS

Canadian Pacific Consulting Services Ltd. sent a team of engineers and economists to Ankara, Turkey, late in August to begin an eight-month study of Turkish State Railways. The Montreal-based firm won the World Bank contract in competition with British, French, German and U.S. firms. The CP team, headed by R.A. Shea, will propose organizational changes and will evaluate proposed investment programs.

AUTO-TRAIN EARNINGS RISE SHARPLY

Auto-Train Corp. announced that its earnings had more than tripled in the first quarter of fiscal 1973, compared with the first quarter of fiscal 1972. Earnings before provision in lieu of taxes and extraordinary items were $406,663 (unaudited) for the quarter ended July 31. That compared with fiscal-first-quarter 1972 earnings of $123,587 before taxes and extraordinary items. Operating revenues totaled $4,433,259 in the 1973 fiscal first quarter, compared with $3,090,634 in the 1972 quarter.

ROCK ISLAND: TROUBLED—BUT HOPEFUL

The losses are bigger and the cash balance is shrinking—but Rock Island is still hopeful it can weather this crisis as it has weathered crises in the past. Though cash has dropped below $1 million—lowest figure since the road went through reorganization 25 years ago—the balance is described as enough to meet needs, and RI is still looking into new sources of working capital (RA, Aug. 13, p. 14). One possibility: Short-term loans, on such collateral as $15.5 million in treasury-held first mortgage bonds, stock in Trailer Train and/or certain receivables. Another possibility: Federal loans or guarantees. RI revenues have been up substantially this year, but so have its costs and the 1973 loss after extraordinary items is now estimated at between $11 million and $12 million, or about double the '72 loss. As for the long-proposed merger with Union Pacific, here, too, Rock Island is hopeful—hopeful that the ICC will approve the merger "within weeks" after the Oct. 19 deadline for replies to exceptions to the recommended report (RA, Sept. 10, p. 10; see also Viewpoint, this issue, p. 66). The update on the RI situation came at the road's annual meeting, Sept. 10 in Chicago.

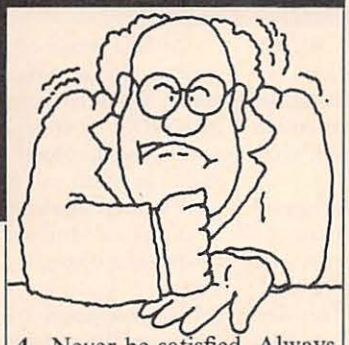
A Mo-Pac Guide: How to get the best of everything from carriers.

You've got a tough job to do. And some times, it can seem as if it's all getting the best of you. Well, enough of that. We think you deserve better. And one good place to start to get it is with the carriers who want your business. That's what this guide is all about.

1. If a carrier wants your business, then he'd better act like it, not just talk about it. Remember, nothing speaks like money. And one good way to tell how interested a carrier is in doing a good job for you is if he's spending anything on capital improvements; and if so, how much and where it's going.

2. Take a look at his investments in new equipment. Delve into what he's spent recently (in the last ten or fifteen years, not the last hundred) on rolling stock, new tracks, improved terminal facilities, computer hardware. See how it relates to your commodities and how it applies to others (so you get a look at what he's up to in general). You might just find something useful.

3. Find out what else is new. Good equipment is one thing. Making good use of it is another. Look into what new services and new channels of distribution they have to offer. If they're really interested in serving you, they'll be doing their homework.



4. Never be satisfied. Always be demanding. There are new technological advances, routes and rates opening up all the time that may be better than what you're getting now. This is a challenging, dramatic business and complacency is the worst thing that can happen to anyone in it, carrier or shipper.

These rules may help you as a guide to better distribution. And George Craig, Assistant Vice-President, Sales & Service, Mo-Pac, has a suggestion:

"It became readily clear that the way to get the best of carriers is to get the best carrier to begin with.

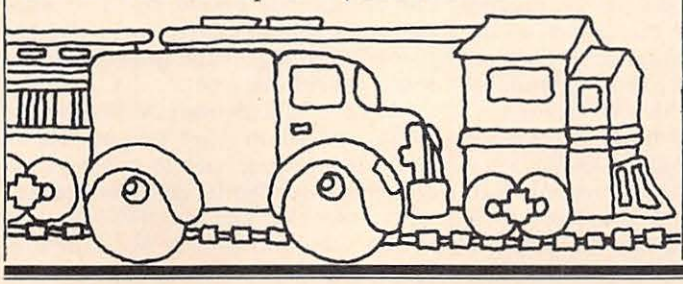
"For our money, (and for yours) we think that carrier is Mo-Pac. After all, we've dedicated ourselves to offering the best in total distribution. We've spent three quarters of a billion dollars in capital improvements since 1961 to deserve your business.

"We've invested millions in establishing our freight car fleet as one of the most modern in the world, and millions more in keeping the tracks in our 12-state, 12,000 mile territory in top condition.

"We've done a lot of work around the yards, too. Rebuilding and modernizing. Investing in new computerized, automated freight classification facilities at key points throughout our system, like the new Centennial Yard in Fort Worth.

"And to make it all pay off for you, we've established the multi-million dollar Mo-Pac Transportation Control System, the biggest advance in distribution since diesel replaced steam.

"So, make it a point to talk to your Mo-Pac representative. He's a pro who'll do everything he can to give you the best. And you can't do better than that."



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NEWS

After the Canadian strike–the rate question

Trouble in the North—rail labor trouble between Canadian railroads and the 55,000-strong Associated Non-Operating Unions—turned out to be big trouble, bad trouble, between July 26 when it began and the second week in September when it finally ended (RA, Aug. 13, p. 13).

The unions started out by striking selectively, a province or two at a time, for short periods of time. Finding this tactic unproductive, they switched to a nationwide, all-carriers walkout on Aug. 23. The end to the shutdown came only after a special session of Parliament, a back-to-work order sweetened with a healthy wage increase (not only for members of the striking unions but also for members of shopcraft and on-train unions nearing strike stage), and a threat of legal action against workers who for a time refused to obey the back-to-work part of the law.

In the course of the dispute, Prime Minister Pierre Trudeau's control (actually, a minority control of Parliament) was challenged, a group of pickets attemped to invade Parliament in Ottawa, and holdout union members—stretching from Ontario to British Columbia, with the last pockets of resistance in southern B.C.—prevented restoration of normal rail service across the country for more than a week after Parliament acted.

The actual increase legislated amounted to about 18%—more than the government wanted to grant, but less than the union group had demanded. The legislated settlement also provided for an arbitration procedure, looking into work rules as well as into the question of whether the wage provisions mandated by Parliament (to become fully effective by mid-1974) should be increased.

Canada's major railroads, meanwhile, were estimating that the increases already ordered will cost about $300 million over two years—and this, without immediate promise of offsetting increases in rates.

When the confrontation began between the non-ops and Canadian National, CP Rail and smaller Canadian roads, the unions opted for a variation of the tactics used most recently in the U.S.—the selective strike. But, where the United Transportation Union in 1971 started by hitting a few roads and then added to the list in the U.S., the unions in Canada—with only two major properties to strike—chose to go province by province, returning members to work in one area as they called them out in another.

CANADIAN RAILROAD STRIKERS are shown demonstrating on Parliament Hill in Ottawa.

As this series of walkouts took place, several things also happened: The railroads tried to compensate by cleaning up traffic in to-be-struck areas and by getting trains ready to move into struck areas as soon as the pickets departed; government showed no great inclination to intervene; and the unions appeared to be losing a degree of control—i.e., as one observer put it, union control over getting members back to work seemed to be on the ragged edge of breakdown. Either because of this or because selective striking seemed unproductive, the organizations went nationwide. Or, as one union source was quoted, "We can no longer deny our members this ultimate weapon."

While the nationwide walkout began Aug. 23, Parliament did not get around to acting until Sept. 1, and its order then was that strikers should be back on the job by 12:01 a.m. Sept. 2. And the package enacted—with its mandated, higher-then-proposed wage increases—came over the opposition of Canada's Transport Minister, who argued that Parliament should not be placed in a position of having to judge the merits of carrier and union positions in deciding upon strike-ending legislation. The only reason for the special session, he declared, is that "there is a national emergency. . .and the only thing we can solve is the urgency—not the dispute between the parties."

Now, Canada's labor relations continue to be a problem—but the biggest immediate problem may concern rates. With the added labor costs (and with a couple of other settlements still pending), some way must be found to increase the flow of money into railroad coffers. But, there is a complicating factor, injected by a government minister some weeks ago, before the strikes and the Parliamentary settlement. The minister went on record publicly as declaring an 18-month freight-rate freeze.

In view of this, most observers see only three alternatives: (1) The railroads will be flat-out stuck with higher wage costs, without income offsets; or (2) government must find some way to back away from the minister's position and permit rate boosts; or (3) if rates are to be held at current levels and the railroads are still to be helped, subsidy seems the only way out.

As of mid-September, with the cost factor now known—and with operations really just getting back to normal after all strikers decided to obey the back-to-work order—the rate question remained the big one. And nobody was quite sure how it would be answered.

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Charles Fessler, WABCO-COBRA Representative

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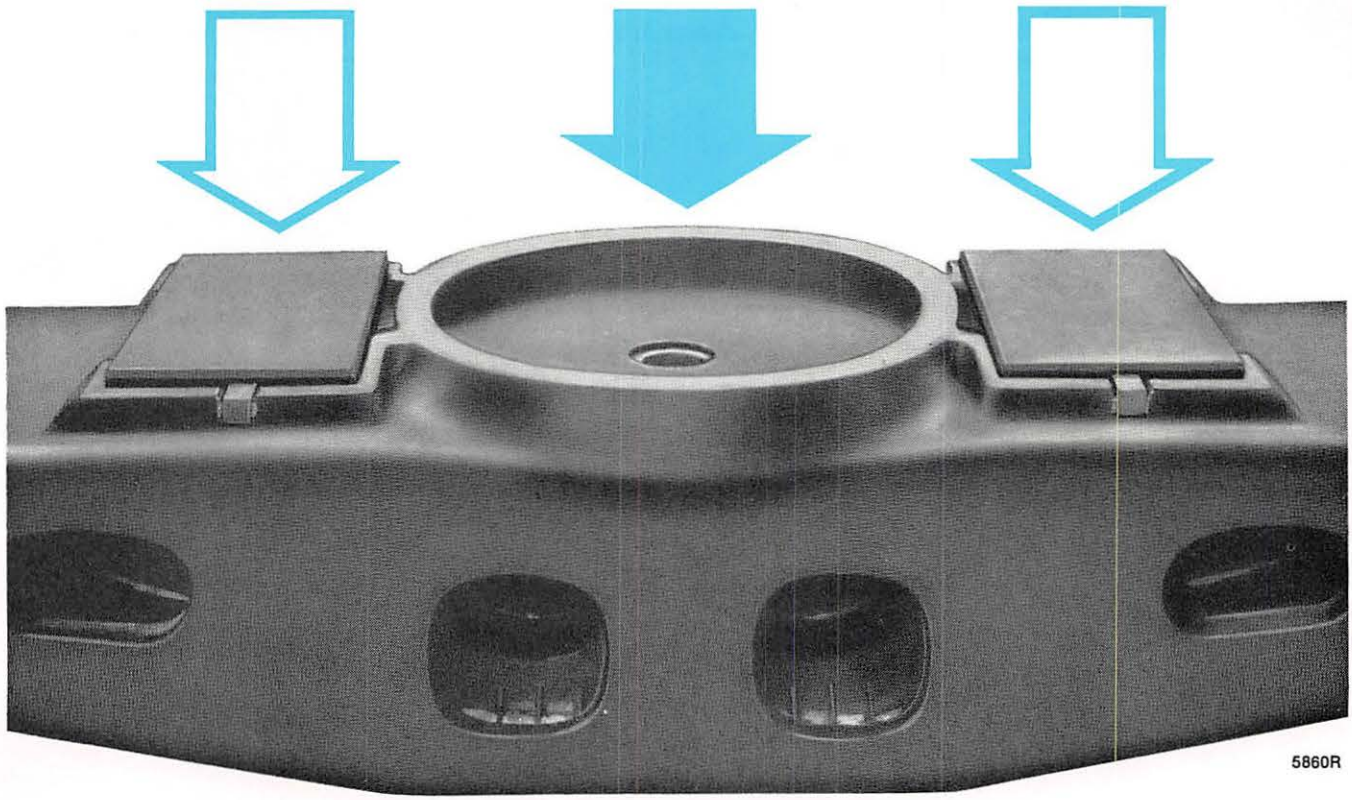

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Non-rail sources boost second-quarter net

Ordinary (net) income of Class I railroads in this year's second quarter amounted to $272 million—an increase of about 25% over the comparable 1972 figure. But railroad operations get very little credit for the improvement. It came mainly, says the AAR, from increased receipts from non-rail sources.

While railroad operating revenues for the six-month period reached an all-time high of $7.2 billion, up 9.1% from the year-ago figure, operating expenses, taxes and rents also peaked—at $6.8 billion, an increase of 9.5%. Thus, the net railway operating income for the period was only $414 million, up 2.1% over the first six months of 1972.

Ordinary income is calculated after fixed charges, including interest, are deducted, and net income from non-railroad operations is added.

The AAR said that 27 of the 64 reporting Class I roads had lower operating income this year. Of the 15 railroads which reported deficits in this year's first half, 11 were in the Eastern District, three in the West and one in the South.

CLASS I RAILROADS IN THE UNITED STATES

	1973	1972
For the Second Quarter		
Operating revenues	$3,726,867,398	$3,444,270,939
Operating expenses	2,924,531,449	2,695,280,656
Tax accruals	330,835,382	294,707,129
Rents (net debit)	260,687,987	218,999,993
Net railway operating income	210,812,580	235,283,161
Ordinary income		
United States	150,754,888	142,697,280
Eastern District	20,375,013(d)	27,112,636(d)
Southern District	$58,903,949	55,236,364
Western District	112,225,952	114,573,552
For the First Six Months		
Operating revenues	7,249,972,538	6,647,538,346
Operating expenses	5,682,891,967	5,231,362,694
Tax accruals	646,126,200	580,144,433
Rents (net debit)	507,449,435	431,065,595
Net railway operating income	413,504,936	404,965,624
Rate of return*	3.03%	2.53%
Ordinary income		
United States	272,068,361	217,448,807
Eastern District	55,742,410(d)	87,389,965(d)
Southern District	111,877,399	106,673,940
Western District	215,933,372	198,164,832

(d) Deficit
* Rate of return for 12 months ended June 30

MP places largest equipment order

Missouri Pacific doesn't believe in doing things in a small way—which may account for MoPac's coming up with the largest single equipment order in its history, a $75-million program calling for acquisition of 60 locomotives, 2,519 freight cars and 60 cabooses.

Deliveries will begin early next year, and this is what MP will be getting:

—Fifty-five 3,000-hp diesel-electric units and five 1,500-hp units. This will bring to 617 the number of new locomotives MoPac has acquired in the past decade.

—Fourteen hundred box cars, all equipped with load-cushioning devices; 200 100-ton covered hopper cars; 500 65-foot, 100-ton gondolas; 300 100-ton open-top hopper cars; 100 100-ton flat cars, and 19 high-cube box cars. In addition, the list includes 225 auto racks and the 60 cabooses. And, the new orders bring to close to 30,000 the number of new freight cars ordered during the past 10 years—a figure almost equal to half of the road's present freight-car fleet.

It's a big outlay—and an expression of confidence. As Chairman Downing B. Jenks put it, "These additions to our fleet, already one of the largest and most modern in the railroad industry, will be of great benefit in meeting present and projected needs of shippers throughout our 12-state territory."

ICG will collect fares a new way

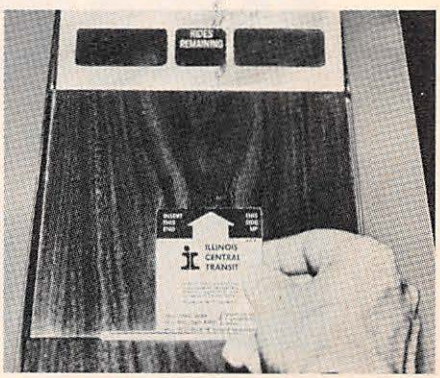
It's billed as one of the most advanced fare-collection systems in the world—and over the next two years it's going into service at 45 stations on Illinois Central Gulf's Chicago-area commuter lines. In all, 174 gates and 129 ticket-vending machines will be involved—at a total cost, including developmental work, which has been pegged at $3.4 million.

This is a system that has been under test for about two years—with eight gates now in use at the suburban Homewood station and four vendors in service at Homewood and at the downtown Randolph Street terminal. It is produced by Cubic Industrial Corp. under a sub-contract from Western Data Products, Inc., which, like CIC, is a subsidiary of San Diego-based Cubic Corp.

The vending machine shows a route map, zoned, and offers a variety of options—for one-way, roundtrip or weekly tickets. Currently, the machines sell three types of tickets for ICG's seven zones, but there is capacity for expansion to an eighth zone. The vendors take both coins and bills and will make change ranging from a nickel to $19.95.

The turnstiles take in the electronically-coded tickets, deduct one ride, allow the commuter through the gate and return the ticket to him, regardless of whether it's used up—because the commuter will need the ticket to get out the gate at destination.

WITH ICG's AUTOMATIC fare-collection system the first step is to buy the ticket from a change-making machine.



TICKET IS THEN INSERTED at turnstile, electronically scanned and returned.

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Watching Washington

SENATOR WEICKER CHANGES HIS MIND

A few months ago, Sen. Lowell Weicker (R.-Conn.) was making worrisome noises (worrisome to the railroads, at least) that suggested he was carrying on a serious flirtation with the idea of railroad nationalization. So Railway Age asked the Senator just what he had on his mind.

Weicker told Railway Age he did, indeed, favor government takeover and maintenance of all railroad rights-of-way—but he emphasized that this would give railroads only the same kind of Federal assistance that the highway and airway users have long taken for granted.

We persisted: Wouldn't this be very close to nationalization? Said Weicker: "The government wouldn't be operating the railroads at all. They'd simply own the right-of-way the same way they own the highways. I don't believe in nationalization: the government has enough trouble running the government. Adding railroads to their headaches wouldn't help the situation at all." (RA, Mar. 12, p. 40).

LOWELL WEICKER
He would nationalize even the subways

Now, Senator Weicker seems to have changed his mind, at least insofar as passenger railroads are concerned. He rose on the Senate floor Sept. 10 and declared, "The time has come for legislation to nationalize the entire passenger rail system in America. Patchwork proposals. . .are no answer to the problem, and I am personally ending my support as well as my votes for any more half-measures. As an alternative, I am drafting legislation to be introduced by early 1974, which would require the Federal government to take over and operate all passenger services in our intercity and mass transit rail systems."

"THE GOVERNMENT WILL BE RUNNING THE TRAINS. . ."

Yes, that's what the man said. And in case anybody was still left in doubt, he painstakingly spelled out a proposal that would have Washington running not only the "Empire Builder" but New York's 7th Ave. local:

"This will not simply be a proposal to expand Amtrak. It means the Federal government will be running the trains—passenger trains—and no more of those quasi-government corporations that put essential services in the twilight zone. It is not just the long-distance trains now within Amtrak. It is the commuter trains that run to our suburbs. It is the subway in New York, BART in San Francisco, MARTA in Atlanta, the Metro in Washington. It will be a plan that asks only one question and needs only one answer. Do the people of this nation consider passenger services by rail to be a necessity?"

There was no immediate outburst of comment on Weicker's proposal from his colleagues. Some of them were not even on the floor that day to hear his speech. They were huddled in committee rooms working hard to come up with acceptable legislation to cope with the Northeast railroad crisis—a crisis primarily of freight, not passenger haulage—and, possibly, protect the future of freight trains, which some think are just as important to America as the 7th Ave. local, and right now are in far graver danger.

Modified Shoup bill seen as prevailing

Two weeks after Congress returned from its long Labor Day holiday, there was still no firm fix on which route it would take toward an ultimate, or even a temporary, resolution of the Northeast railroad crisis. But industry observers were beginning to feel that a modified version of the "Fannie Rae" proposal sponsored by Rep. Richard Shoup (R.-Mont.) might ultimately prevail. The modifications presumably would include portions of alternative plans which have been advanced by Rep. Brock Adams (D.-Wash.), chairman of the House Surface Transportation Subcommittee, of which Shoup is a member; Sen. Vance Hartke (D.-Ind.), whose own proposal—for sending the whole question to the ICC for another year of study, was drastically changed by the so-called Pearson/Beall amendment which one observer described as being "the Shoup bill, with DOT modifications"; and the position of the DOT/Administration itself, which wants a smaller Northeastern system, supported by less Federal aid, than is contemplated by the other proposals.

In mid-September, the Shoup bill was inching along, but it was moving. In the Senate a standoff appeared to have developed following the changes put into the Hartke bill by Senators James B. Pearson (R.-Kan.) and J. Glenn Beall, Jr. (R.-Md.). It seemed likely that the Senate would await final House action, possibly in late October, and then take up the House bill.

A major difference between Congressional leaders has been on the question of labor-protection costs that would be involved in any solution. Early in September, railroad management and labor leaders had reportedly agreed on a plan which they were trying to sell to DOT Secretary Brinegar.

The Shoup plan essentially embraces a proposal advanced last April by Union Pacific Chairman Frank E. Barnett. That plan called for a government-sponsored but industry-controlled Federal National Railroad Association (Fannie Rae) to provide funding to Northeast operating rail carriers.

The funding, Barnett proposed, would be borrowed by Fannie Rae from private sources of investment capital and would be guaranteed by a wholly government-owned organization whose guaranty. . .would in turn be backed up by the U.S. Treasury.

Meanwhile, President Nixon, in a message to Congress Sept. 10, warned again that some of the proposals in Congress "would merely postpone action. . .or could lead to quasi-nationalization."

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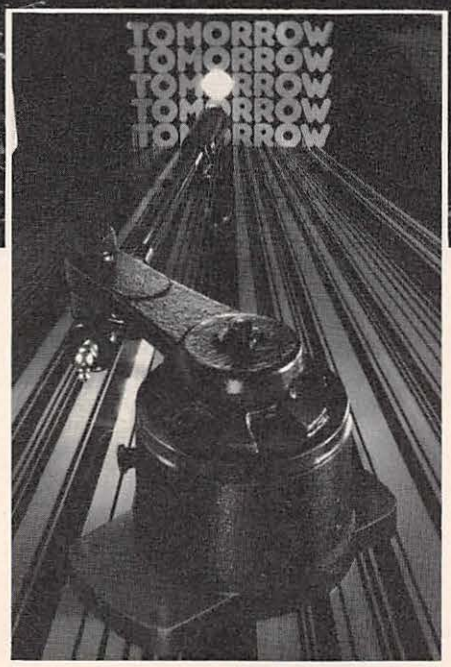

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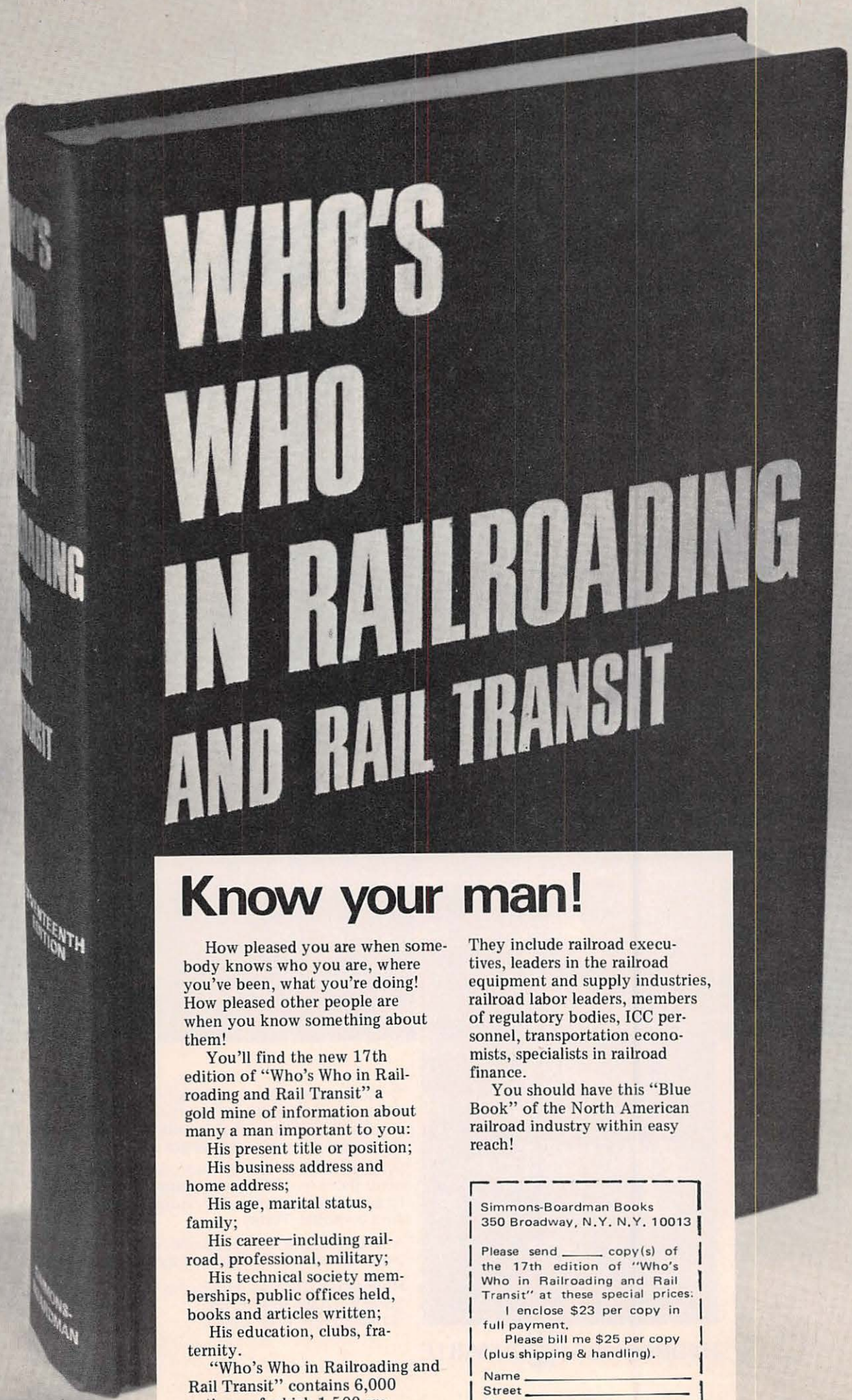

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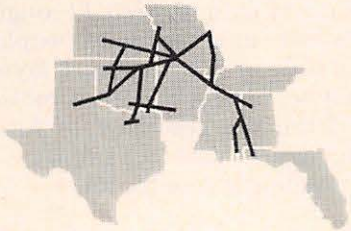

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Lines on Labor

GUS WELTY

JOB AND MAN, MAN AND JOB

It's not enough anymore (if, in fact, it ever was) to fit a man to a job. The job has to be fitted to the man—or, to put it another way, if man and job aren't suited to each other, the man's going to be unhappy and the job, quite likely, will be done badly. More and more corporations are coming to realize this, including a good number in the railroad industry—and front and center in the railroad group is Chicago & North Western. Such philosophies aren't really new to North Western. Since a full-fledged personnel department was set up in the late 1960s, C&NW has been working on the man/job match. Now, it may be about to get a real handle on the situation—with a couple of guys who (1) know what their job is all about, and (2) are approaching it with an enthusiasm that doesn't stop.

THE GOAL: OPTIMUM RESULT, WITH MUTUAL GAIN

Bill Clark is director-personnel resources, non-operating, and Ed Kelleher is director-personnel resources, operating. They're both industrial psychologists. Each has a Ph.D. Neither one will see 40 for a while, in one case for quite a while. But, none of that should scare anyone—because these are two cool operators whose goals and motivation might be summed up rather simply: "What we're after is the optimum in effective utilization of people, to benefit both the company and the individual. And we have to have both benefits, because if we don't do good for one, we're not going to do good for the other."

Obviously, a big part of the Clark/Kelleher job—maybe the biggest single part—lies in that broad area that might be termed knowing-where-the-talent-is-to-keep-the-management-pipeline-filled. To this end, North Western has started developing a personnel data bank—beginning with management people and being expanded into the supervisory and contract-employee ranks. (Significantly the computerized file doesn't stop with a bare listing of qualifications. It includes data in "interest" areas. It has led to a kind of inter-departmental upward mobility at C&NW, and it's going to lead to more of that kind of thing.)

Equally important in the long run, however, may be that function of Clark and Kelleher that is best described as "counseling." At this point, there are just the two of them plus a secretary, so the counseling (among North Western's 15,000-or-so employees) of necessity has to be limited. But the door is open, and if a clerk or a switchman wants to talk about his career, and about where he can go and what he ought to do to get himself there, C&NW's personnel-resources people are ready to help—by helping to define goals, perhaps laying out an advancement program, maybe setting things in motion so that an employee can get aid from the company in furthering his education. Clerk? Switchman? Just examples. In North Western's setup, career-counseling is free for all.

MAYBE NOT "FIRST," BUT...

In some ways, C&NW is a peculiar railroad. Management is tough-minded, yet management is free-wheeling. Rail labor has fought bitter battles with management, yet C&NW has worked out agreements that others have only tried to work out. Personnel-resources work? North Western isn't first—but Clark and Kelleher aren't concerned with first. Try "best."

Steel supplies causing concern

To the energy crunch, add the steel crunch—at least so far as parts of the rail supply industry are concerned. Several factors apparently are contributing to the problem:

—Heavy demand for sheet and plate from the automotive and appliance industries. Major rail suppliers have to compete for plate, and also have large-scale need for structurals and shapes which are lower-rated than sheet and plate and thus may suffer in production scheduling. Plate, in particular, is a problem. Steelmakers are said to be running behind on deliveries, which means that carbuilders are being forced to buy more-expensive warehouse steel. The steel companies, however, are apparently trying to take care of established customers, and that group includes major old-line builders.

—Carbuilders have been unable to build up any kind of steel inventories. A hand-to-mouth situation exists. And, even though prices (and the prime rate) have gone up, buyers in all fields are continuing to buy steel.

—Ironically, if steel management/labor negotiations had been coming up this year, major users would have stockpiled. But negotiations don't come up until 1974, and the current and consistent peak demands for steel were not predictable or predicted.

—So far as producers of cast railcar components are concerned, raw materials are not yet a problem. Scrap steel, for instance, is plentiful. But even in this area, trouble could be coming: Scrap prices are rising, and car supply for movement of scrap is described as "not too good."

—With demand exceeding supply, the question of priorities arises. Steelmakers are said to be setting their own, and there have been suggestions that the Federal government get involved. If shortage problems continue, it may come down to what's more important to the nation and its over-all economic well-being: Covered hopper cars, automobiles or refrigerators.

While there are indications that the rate of freight-car ordering may be starting to slacken somewhat from the furious pace set earlier in the year, the rate still is high—and with a gap of several months between order and delivery, the backlog of unbuilt, undelivered cars continues to rise. On Aug. 1, the backlog of commercial carbuilders was 43,189 cars, highest in nearly seven years (RA, Sept. 10, p. 8). Orders for new freight cars placed so far in 1973 have already far exceeded the total number of new cars ordered during 1974.

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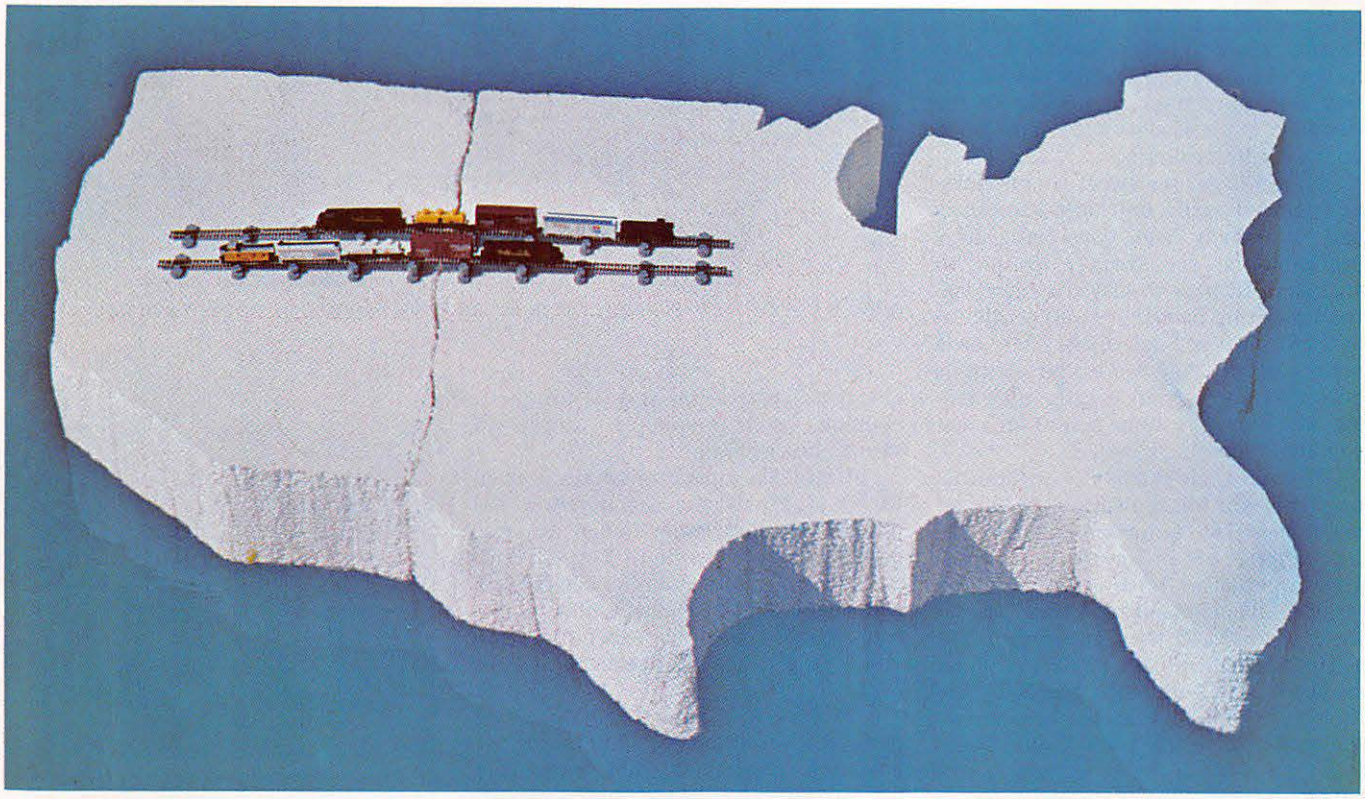

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Profit through Productivity

Unit-trains: Traffic by the trainload

By GUS WELTY, Senior Editor

There's a sweet sound to that phrase: Traffic by the trainload. Steady, consistent traffic movements over weeks and months and years. Profitable traffic. Traffic made-to-order for a volume-hauler like a railroad. Traffic moved in a way that fully meets the needs of the customer while it allows the railroad to do what railroads do best.

By and large, the sweet sound really is. Trainload traffic, unit-train and otherwise, *is* steady and consistent. It *is* profitable, viewed from a couple of angles. It *is* made-to-order for the rail-transportation capability, especially so in areas where rail plant has been under-utilized. And it *must* be satisfying both user and carrier, because it's growing, in terms of volume and of different commodities being handled.

Of course, all this is not without its problems—for transportation people, for maintenance-of-equipment departments, for maintenance-of-way forces, maybe even eventually for the financial fraternity. But fortunately—thus far, at least—there have been reasonably fast adjustments when problems have cropped up. And what railroads and their suppliers have been learning over the past five to 10 years should stand them in good stead in coming years, when all that forecast growth comes along.

● **Today's state-of-the-art.** Though the technology has been around for quite a while, application of the unit-train principle is a relatively-recent phenomenon. Some roads have had extensive experience with such operations, other are new to the game. But an extensive Railway Age survey of major roads indicates that, at this point, these conclusions can be drawn:

—The commodity list keeps getting longer, taking into account traffic moving by unit train and by the trainload under circumstances that may not quite meet the strict definition of a unit train. What's moving? Coal and grain, of course. But also sulphur and sulphuric acid, coil steel and semi-finished steel, ore and taconite, wood products and other farm products, aggregates, limestone, potash, sludge, automobiles and parts, trailers and containers, even modular-housing units and mobile homes. The potential is there for increasing the volume on most of these commodities. And, in addition, various roads are looking at possibilities in such commodity-areas as fertilizer, other chemicals, petroleum and its products, alumina, and municipal wastes of various descriptions.

SANTA FE: Molten sulphur is one of dozens of commodities now moving by unit train.

CP RAIL moves dry sulphur in trainloads.

—Unit-train operations have proved to be profitable. As the question was posed, railroads were asked to rate profitability on a scale of 1-to-10, with marginal profitability at the bottom end and a high degree of profitability at the top. Almost without exception, railroads pegged the profit factor at 5 or above.

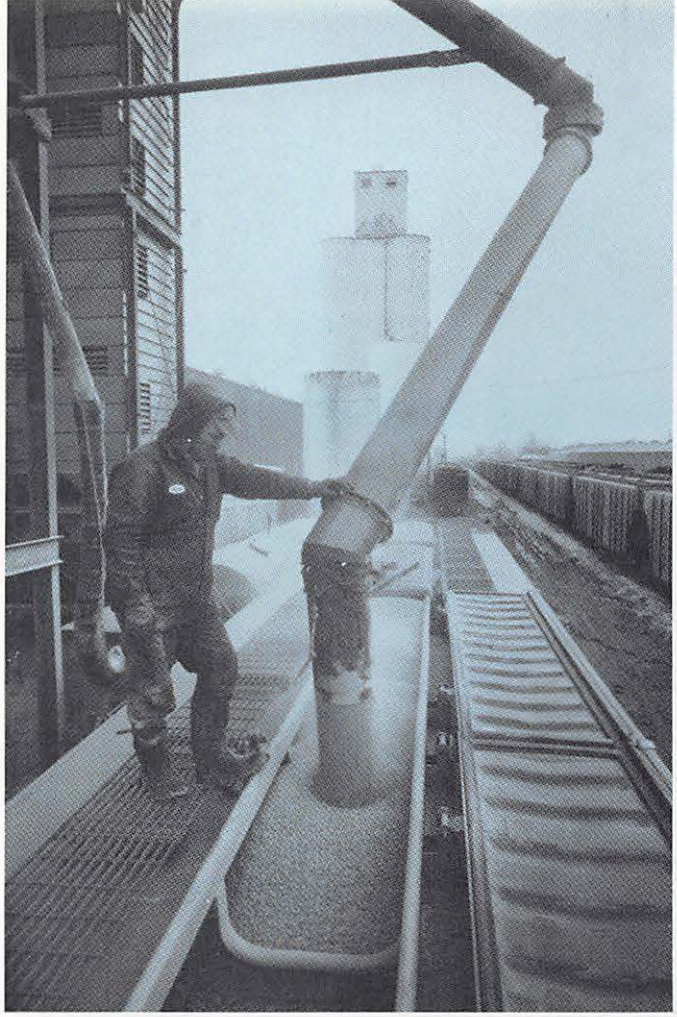
—Progress has indeed brought along problems, occasionally for the transportation department but principally for mechanical and engineering departments. Faster-than-"normal" wear of equipment has forced railroads to change traditional inspection, maintenance and repair procedures. Characteristics of unit-train operation have also brought revision in track-maintenance practices, though problems in this area are less well-defined than in the equipment area.

—The future for unit-train operations looks good, though the outlook naturally varies depending upon a railroad's location, its traffic patterns and the nature of the territory.

By definition—*one* definition—a unit train is a consist that carries one commodity from origin to destination in a continuous cycle, slowing down for loading and unloading and stopping only for fueling and inspection. That's a good definition for a coal unit train, for instance, and it's not met by all the operations covered in the Railway Age survey. But certain broad characteristics are shared by unit trains and other trainload operation, and it's these characteristics that bear exploration.

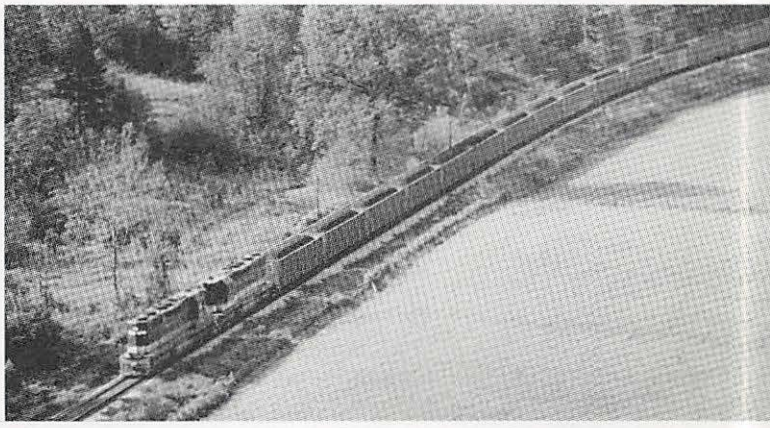
● **For the operating man...** From a strictly-transportation standpoint, the unit-train concerns of operating officers aren't much different from their normal concerns: Motive power, cabooses and crews must be available precisely when needed; variables in operations, including derailments and adverse weather conditions, must be compensated for—though the effects of a line tie-up are compounded in the case of a unit-train operation because of the tight scheduling involved.

In terms of specific operating problems, several roads note a certain amount of added crew-deadhead expense and, in a case or two, excessive motive-power delay (which, ironically, results mainly from the fact that these roads operate relatively few unit trains at this time). Problems may also develop, as one road points out, "by reason of delays at loading and unloading sites by shippers and consignees, and this has an adverse effect upon equipment utilization. At the same time, penalties are built into the unit-train tariff or considered in the over-all cost and are thus reflected in the costs of the shipper or receiver who delays."

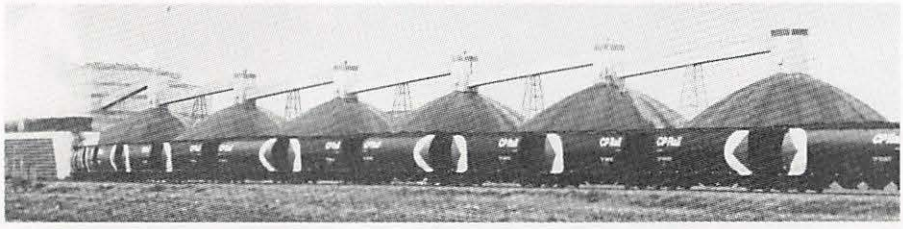


ROCK ISLAND loads grain for unit-train haul.

PENN CENTRAL moves first trainload of mobile homes.



SOUTHERN introduced its 10th unit coal train Sept. 2.



EXPORT POTASH moves via CP Rail to Port of Vancouver.

● **Getting control.** Predictably, different roads take different paths toward the goal of making the operation function properly. For example, Burlington Northern—one of the country's biggest unit-train operators—has set up a section in its Transportation Division, "with the responsibility of putting together the complete design of unit trains on behalf of the operations department, based upon the marketing need balanced against operating capacity and investment requirements." Through this section, BN says, all concerned are made aware of the expected performance of a train as part of a multi-party materials-handling system. Headquarters-monitoring and realtime-control functions also lie within the section, "and to complete the over-all functions, there is a capability to analyze and audit operation-vs-plan."

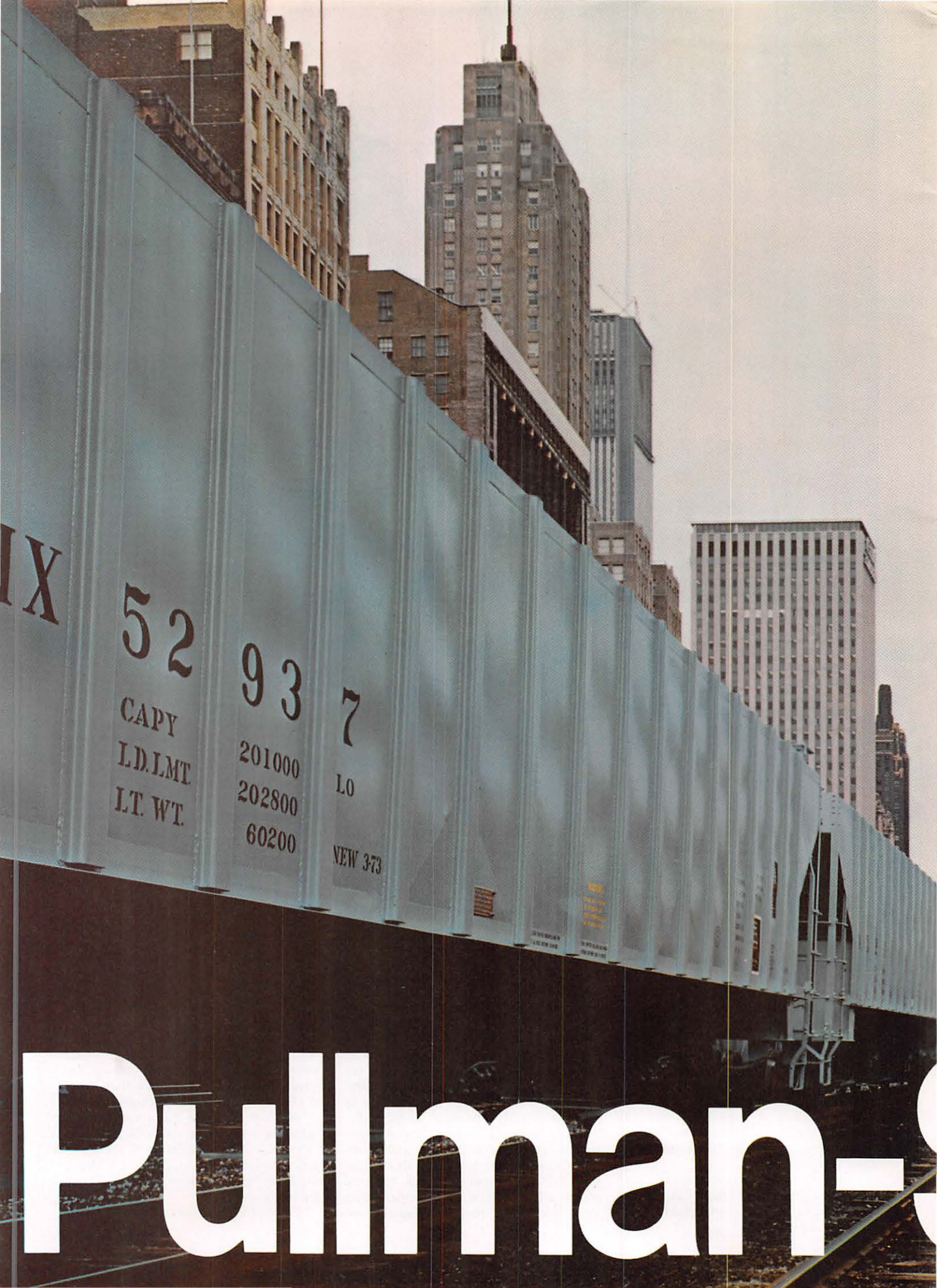
Generally, only a few carriers have any significant complaint on train operations—and most, predictably, call attention to the efficiencies and economies made possible because the trains escape even the limited amount of switching involved with regular through trains. Or, as Rio Grande sums it up, "Unit-train operations have tended to smooth out many operating problems, in that volume loading and unloading, along with equipment and crew scheduling, inspection and so forth become established, well-functioning routines."

● **For maintenance-of-way...** In terms of maintenance, however, the story is somewhat different—but the problems are not always easy to pin down. So far as maintenance-of-way problems are concerned, for example, Illinois Central Gulf engineers describe the situation as hard to identify and hard to quantify: "This is primarily due to the state-of-the-art with reference to track/train dynamics and the relatively short time that unit-train operation has been in effect on ICG. But, we're convinced that unit trains are more susceptible to harmonic action and the problems related to it than mixed-consist trains. It's our belief that as a result of the joint AAR/RPI research program on track/train dynamics, along with other research efforts in the industry, a number of problems can be identified." Louisville & Nashville is thinking along similar lines: Some problems have been experienced with respect to corrugation of rail and gauge-maintenance—but at this point, the causes can't be pinpointed to unit-train operation, since similar problems can crop up in territories where unit trains are not operated.

Southern puts the situation this way: Due to the high tonnages and capacity loading of equipment which is involved, m/w expenses are higher over unit-train routes, "depending entirely upon the normal density of the line-segments involved. But the trains themselves have caused no problems in particular resulting from their operations."

● **Problems and solutions.** Other roads, however, see problems of varying natures. Missouri Pacific notes that "cars of the same size and characteristics tend to develop the same harmonics, which aggravate pumping conditions at joints, switches and road crossings at less-than-perfect locations. Also, closer spotting is required. Some curve wear and shelling is experienced."

Burlington Northern comments that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Standard

Unit trains require heavier maintenance for branchlines

track surface does "deteriorate under the heavy loading, necessitating more frequent surface correction. Superelevation on curves must be maintained at the equilibrium elevation for the actual train-speeds achieved. Rail anchors must be maintained and patterns increased to resist rail creepage. Joints must be kept tight and properly supported to prevent advance of rail defects within the joint area. Subgrade defects, such as slides and sinkholes, must be treated and eliminated because heavy unit trains activate and magnify these difficulties."

Norfolk & Western, a relatively high-density road even without unit trains, says that unit-train operations have brought problems "due to accelerated abrasive wear on the rail. Battered joints develop more rapidly, primarily because of heavier wheel loads. Corrugations on both rails, especially on the low rail of curves, occur with increased frequency and severity, residual stresses are built up in the rail, and uniform repetitive impacts are causing track distortions." How is NW attacking the problems? Through "improved maintenance standards, an increased curve-rail renewal program, an improved ballast section, increasing the size of tie plates to extend tie life, additional spiking and anchoring on curves, welding of replacement rail, increasing the frequency of tie renewals and increasing the frequency of ballasting, smoothing and lining through the purchase of spot tampers and additional production tampers and liners.

Frisco is taking a couple of approaches to fixed-plant problems. In unit-train territory, jointed rail is being replaced with continuous welded rail. In addition, "bridges, both open deck and ballast deck, have received excessive wear and deterioration due to unit-train operation, and we're attempting to replace them with permanent steel and concrete structures as rapidly as money is available."

● **In the boondocks.** . .Then, there's the problem associated with the fact that not all unit trains operate all the time on heavy-duty, mainline track. As Penn Central points out, "As expected, unit trains do require more m/w work, especially on branchlines with light rail, sharp curvature and heavy and undulating grades. Consequently, we have increased our inspection and repair activities in these areas. Such track used by unit trains requires more maintenance because unit-train cars generally are of one design and tend to act similarly dynamically on the track." Compounding the problem, of course, is the fact that "most unit-train cars are of 100-ton-or-greater capacity with maximum center of gravity. Additionally, unit trains usually are of higher tonnage than normal-consist trains."

Rock Island and Rio Grande also comment on the branchline problem. RI has been finding "additional m/w problems on lighter-density branchlines where grain is gathered. This was especially true last spring, when an unusual degree of moisture adversely affected track structures, and it's been necessary to program additional maintenance work to meet this problem." Rio Grande agrees: "In cases of increased tonnages and established moves over formerly light-density branchlines, the upgrading of track structure with its increased expense has been necessary."

Drawing upon the experience of others, mostly, Milwaukee Road notes unit-train operations as a possible cause of faster track and roadbed wear: "This may be attributable to the fact that unit trains tend to wear the same point on track joints and ties due to the consistency of weight and length of cars."

● **For maintenance-of-equipment.** . . At least as significant have been problems with equipment—due primarily to the fact that by their very nature, unit-train operations tend to run the wheels off the cars, figuratively if not literally.

For the most part, wear has been experienced in components that are expected to wear—truck components and center plates, for example—but the high mileages racked up by unit-train cars in a relatively short period of time magnify the problem. In addition, there have been certain rock-and-roll problems, attacked through installation of snubbing devices. Occasionally, structural problems will develop in car bodies and reinforcement has to be added. At least one unit train cited developed high buff and draft forces which resulted in a number of coupler failures. This problem was met with modification of the characteristics of the end-of-car cushioning devices and installation of stronger couplers.

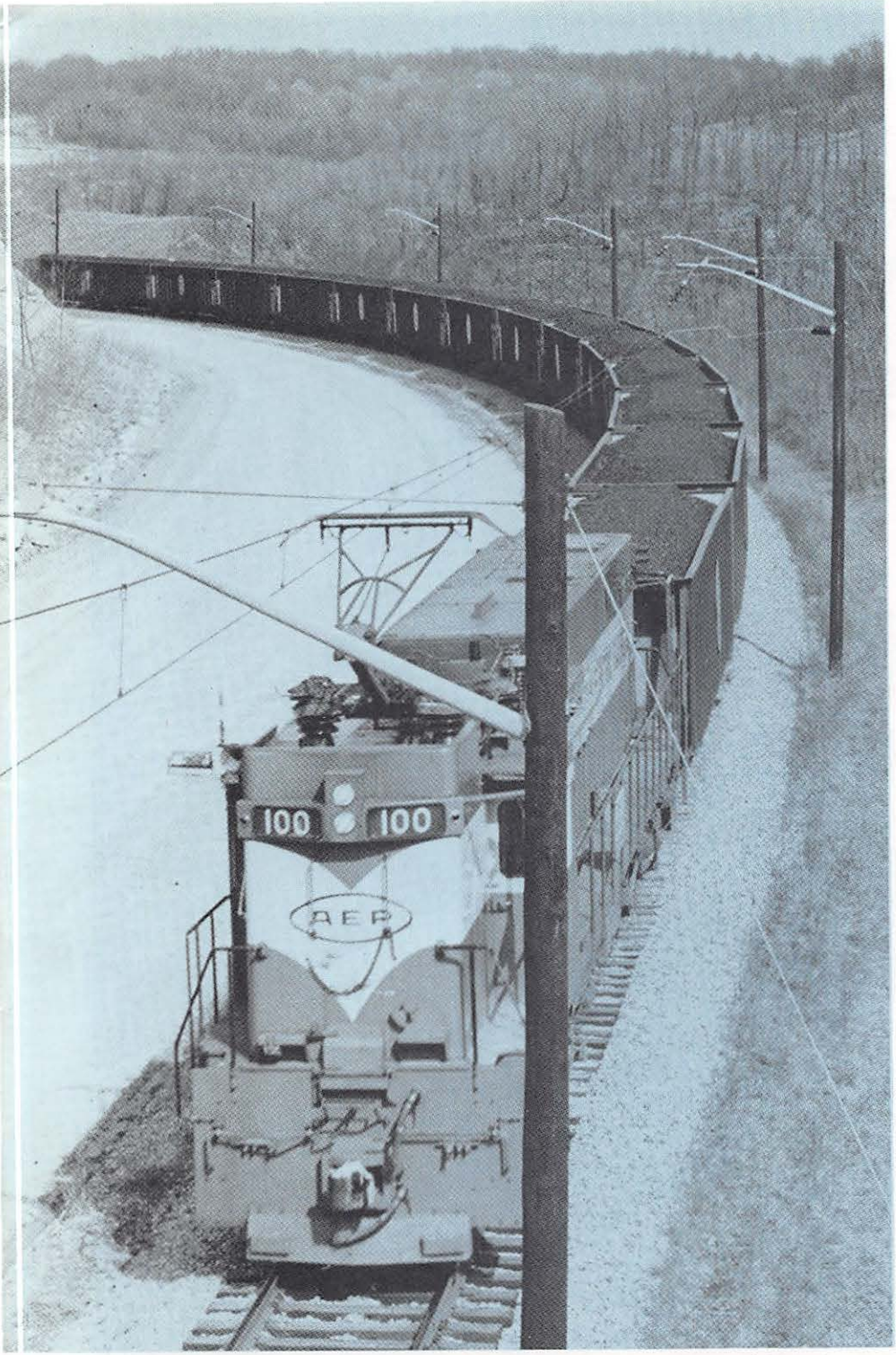
In connection with mechanical difficulties, too, a key factor is the fact that a number of unit trains run from and to points where there are no railroad mechanical forces on hand. Thus, special provisions for inspection and repair often have to be made as a regular part of the operating cycle—but not necessarily at origin or destination.

● **More problems, more solutions.** In specifics, what's happening, and what are railroads doing about it?

Southern finds that "due to the heavy grades and the heavy tonnages handled in the trains, the specific problems are primarily associated with couplers and knuckles and with wheel wear. We use special high-grade couplers and knuckles in these trains, and they're changed approximately on an annual basis. As to wheel wear, it's no more than would be associated with the same cars running for the same mileage in regular service. The reason for the high running-gear wear is the average annual miles which, in some instances, run in excess of 120,000 miles. Carbody structures were designed specifically for this service—coal by unit train—and no difficulty has been experienced except that now, after about 14 years, some structural fatigue is being encountered, requiring certain structural replacements. Considering the miles the cars have gone, however, they have run far in excess of the miles that would have been run by a car in regular service for 50 years."

Santa Fe is another road with several years of experience under its belt, with its York Canyon coal train operating since 1966. It's also documenting wheel and truck wear, and other components such as roller-bearing adapters, springs, bolsters and center castings. The accumulation of mileage on these cars is extremely high, and even though the trains do get turned—so that cars are not always running in the same direction—wheel wear has not been even, a condition Santa Fe mechanical people suspect may be due to problems of tracking or hunting or yaw. Santa Fe's response has been to schedule each car through the San Bernardino heavy-repair shops twice a year—and it has found that wear can be accurately measured and recorded within this interval. As for the life of the equipment, it is felt that the limit has yet to be determined. Interestingly, if Santa Fe were ordering cars today for this type of coal operation, it might bid for only one major change: use of a heavier-design truck.

● **Heavy-duty specs.** Union Pacific, with unit trains hauling both coal and iron ore, is finding no particular problem with motive power, unit-train as opposed to general-service. As a matter of fact, units assigned to one operation between Utah and southern California are scheduled for about 145,000 miles a year, while a comparable unit in general service may pile up 170,000 miles. But, the cars used in this service will run about four times the annual mileage of the average freight car. At this point, with the equipment relatively new, UP sees no significant problems from high utilization and wear, though there have been problems in certain cars related to design or operating practice. As one way of trying to avoid problems, UP has been putting specs on new unit-train equipment calling for ability to withstand a working draft load of 500,000 pounds plus a 1.8 load factor, or a total 900,000 pounds design rating in computation of minimum yield or critical buckling stress. (By comparison, AAR requirements on general-purpose equip-



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ment call for 300,000 pounds plus 1.8 or 540,000 pounds; effective in 1973, UP has eliminated the distrinction between unit-train and general-purpose cars and specified the higher figures on all new cars purchased.) In addition, with safety and equipment and track wear-and-tear in mind, UP has set coal-train limits of 50 mph in its eastern district and of 40 mph for cars loaded in excess of 75 gross tons per operative brake in mountainous areas of its south-central and north-western districts.

Elsewhere in the West, BN has experienced "accelerated and compacted wear on unit-train cars because of high mileage—but nothing particularly unique. Use of grade B castings in truck sides and bolsters, grade E metal in couplers, high-capacity draft gear and hardened C wheels has alleviated many wear problem areas." In addition, BN is now working on a study of a run-through facility "which would provide maintenance for wheels, trucks, air brakes and carbody repairs on a unit-train set of cars in a short time."

Missouri Pacific says the need for stepped-up changeout cycles for wear-related components has not been particularly noticeable on motive power, except for wheel wear. On unit-train cars, however, "we have noted excessive flange wear due to balloon-track loading and unloading, and use of flange oilers has not materially reduced the problem."

Rio Grande reports problems "in car construction in body structural members as well as in the high-capacity roller bearings in some high-mileage unit-train cars. For the most part, design modification, along with shortened maintenance cycling, has corrected the problems. While this represents additional expense, it may not be out of line on a dollar-per-ton-mile basis—though such figures have not yet been developed."

● **Those center plates...** Rock Island points to a couple of specifics on its grain-train cars: "Center-plate wear has been a serious problem on jumbo covered hopper cars built prior to 1972. But, it's hoped that this problem has been overcome on cars currently being built, due to design changes." RI also makes this point: "For successful operation of unit trains, it's imperative that they be given a carefully-controlled inspection once every roundtrip. On grain trains returning from the Gulf, this is done at El Reno, Okla. We're finding that the chief items requiring repair or replacement are brake shoes and truck springs."

Still another western road has found higher-than-normal wear in truck components, brake rigging, couplers and draft gear: "We have made modifications in truck brake rigging, and have worked with various equipment manufacturers to improve design of devices, in design itself and/or in material specification."

Back east, NW sees a similar problem: "Many of our high-capacity covered-hopper cars are operating in unit grain trains, and this has resulted in accelerated wear in the body and truck center-plate areas. We have initiated programs at all major shops over the system to inspect center plates on these cars and to replace them with new and improved designs using higher-strength steels that are more resistant to wear." Currently, NW is building 1,000 covered hoppers in Roanoke company shops—cars which will be equipped "with larger center plates, which should reduce the wear problem. We intend to have all future 100-ton cars equipped with these larger center plates."

At L&N the story is not much different. Higher wear is being noted in center plates and truck components, and company shops at Lafayette, Ind., on the former Monon, are working on a program of repair and application of heavy-duty center plates.

For Chessie System, the most noticeable equipment problem is accelerated wheel wear. Correction "has been a

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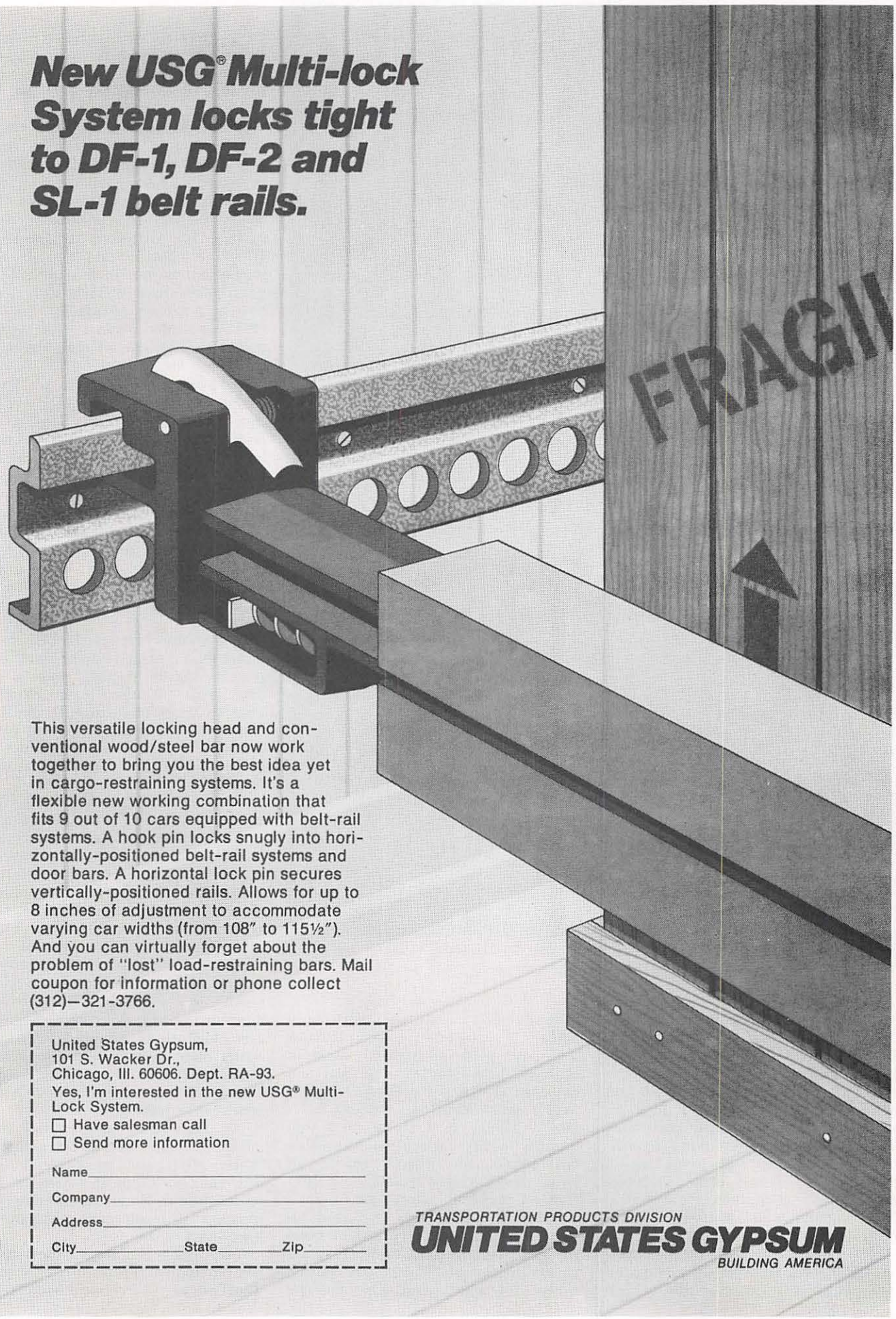

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matter of making certain that our inspections catch this type of situation on a faster-than-usual cycle."

Seaboard Coast Line, a non-owner of the unit-train equipment moving on line, passes on the maintenance question. But, SCL did move more than 7 million tons of unit-train coal last year, and it is aware of certain truck-wear problems.

Across the border to the north, CP Rail—with unit coal trains and solid-train movements of potash, sulphur, sulphuric acid and grain—is experiencing wheel and coupler problems with wear higher than for normal operations: "CP Rail has instituted a program of changing all wheels of unit trains at once. Many of these wheels are then used for replacement of wheels on standard rolling stock. Coupler wear is also higher than for normal operations, due partially to rotary dumping of cars. Couplers are replaced as required when wheel replacements are made."

● **For financial officers...** With the high utilization, the high mileage, of unit-train equipment, the question of car-life rather naturally arises—with particular reference to the matter of depreciation-scheduling vs physical wearing-out of the equipment. And the comments on this question are a mixed bag:

Penn Central: "When equipment is adequately designed, we see no significant reduction in the anticipated life. More frequent replacement of wheels and wearing components does not necessarily reduce the economic life of unit-train equipment. What could reduce the like of unit-train equipment, however, would be an inherent structural deficiency that developed and could not be permanently corrected."

Southern: "We've encountered no particular problems related to depreciation cycles. We have figured normally in our costing of the trains that a 14-year life is appropriate for both power and cars."

Missouri Pacific: "We do not perceive a problem of unit-train depreciation vs faster-than-normal wearing-out of components. Unit trains seldom receive switching impacts, and they get closer attention than free-interchange equipment. Consequently, the life-cycle seems to be about equal for unit-train vs interchange equipment."

Rio Grande: "As yet, we don't have precise experience on faster-than-normal wear rates. However, the wear factors are present, and such information will go into future ROI calculations."

Norfolk & Western: "Since the operation of unit-type trains is a relatively new practice on a limited portion of our equipment, we have not yet established what effect this operation will have on equipment depreciation. We would expect that depreciation cycles would be significantly shorter as a result of more utilization of equipment which accelerates the wear of easily-replaceable components as well as of major structural components that would dictate early retirement."

CP Rail: "It was anticipated from the start of CP Rail unit-train operations—and it's proving to be the case—that equipment being utilized to an optimum extent would have faster-than-normal wear and its own particular depreciation cycle. Cars in unit-train service, however, will have much more productive lifetimes than much other rolling stock."

NORFOLK & WESTERN, big in coal unit trains, has been building new lines to serve new mines.

Still an open question is the matter of equipment ownership—railroad or customer. In certain highly-specialized unit-train applications—Santa Fe's sulphur train or the Seaboard Coast Line-originated citrus train, for instance—cars are shipper-furnished. For less exotic freight, coal or grain, there's a mixture of equipment: BN, for one, leans toward carrier-furnished equipment and since 1970 BN has added or ordered more than 3,800 coal-carrying cars; of the 61 million tons of coal hauled in PC unit trains, about 45 million tons move in cars provided by PC with 16 million tons getting there in shipper cars.

● **For the bottom line...** Then comes the question of profitability—and while there may be skeptics, mostly outside the industry, the railroads operating unit trains are satisfied that they're making it.

With unit trains operating in so many commodities—coal, citrus products, semi-finished steel, wood products, aggregates, grain and grain products, modular-housing units, mobile homes—Penn Central observes that it's impossible to rate unit trains as a group: "That would be like giving a weather report for the whole North American continent." But, PC notes, "it's obvious that we have little interest in the development of marginal business."

Southern, moving only coal on a true unit-train basis, looks at the 1-to-10 marginal-to-high profitability scale, says that "on a per-ton basis we would give our unit trains a rating of about 5. On the basis of the profitability of the whole operation—and considering the fact that in the absence of the unit-train operation it would have been that the traffic would not have been handled at all—we would of necessity get a rating of 10."

Most roads, as noted earlier, put profitability at 5 or better, at current assessments. A number apparently share Rio Grande's feeling that "the long-range futures involved in unit-train traffic tend to place the operation in the upper portion of the profitability-scale rating."

What's ahead for the unit-train concept? Judging from the recent past and the present, plenty.

Consider, for instance, just one road and one commodity—Burlington Northern and coal.

● **New "black gold."** A few weeks ago, BN announced the startup of three new unit-train operations, all involving movement of low-sulphur western coal. One was a fairly short haul, 600 miles for 1.2 million tons of coal annually to an electric generating plant in Colorado. One was a rail/water move, with BN moving coal from Montana about 1,000 miles to Superior, Wis., for transloading to ships which carry the coal 720 miles down the Great Lakes to a generating station at St. Clair, Mich., near Detroit. That particular movement will grow to about five million tons a year by 1976 and will require operation of 10 unit trains a week. And, BN's third new move is the longest, 1,140 miles from Wyoming to East St. Louis, Ill., for trans-shipment by barge via the Ohio River system to power plants in Indiana and West Virginia. Present schedules call for delivery of 120,000 tons a month to East St. Louis, and steadily increasing volumes are projected. And that's not all: BN is gearing up for still other new movements to Texas, Oklahoma, Kansas and Nebraska.

What all this means to BN can be seen in the figures. In 1969, coal ton-miles on BN came to 3.3 billion. Last year, the total was 11.4 billion ton-miles, and 60% of that was accounted for by unit-train operations. In 1968, BN's predecessor roads operated just five unit coal trains a week. Now, BN operates 50 a week. This year, BN expects an increase of about 20% in coal tonnage. And that should put its 1973 coal-tonnage total at approximately 30 million tons—which is not bad for a

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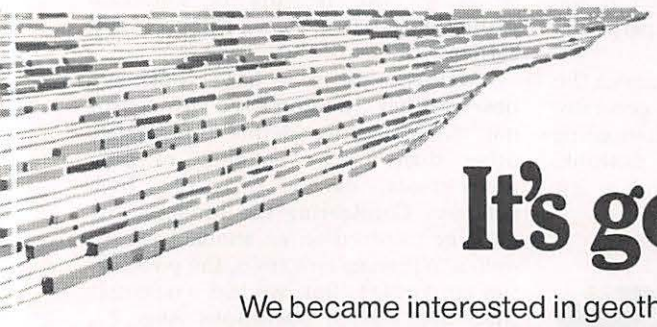

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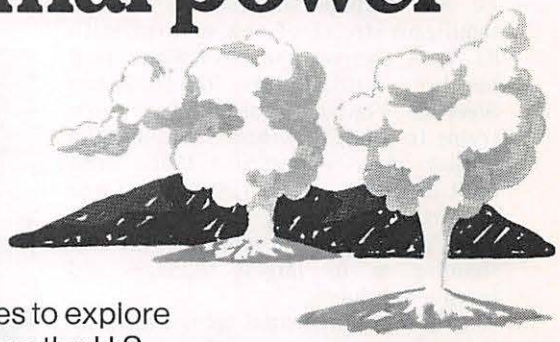
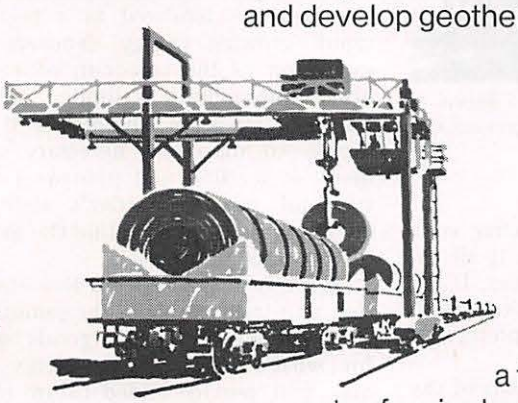


We became interested in geothermal power for the same good reasons we've nurtured our forests and built underground pipelines. It's smart business, and environmentally sound. Harnessing geothermal power can make more efficient use of our land resources and help solve an energy need.

And it's a non-polluting source of power. Recently we entered into a joint agreement with two other companies to explore and develop geothermal possibilities across the U.S.

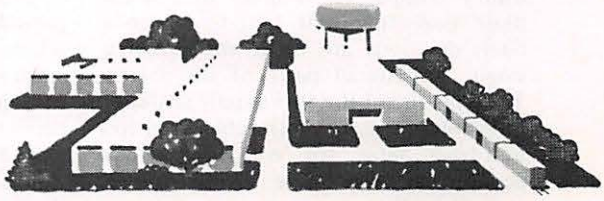


unit trains

A west coast steel producer and his midwest customer asked us for help with a shipping problem: How could they move 300,000 tons of coil steel annually to the midwest at a competitive cost? Our solution: We designed special cars that were 10,000 lbs. lighter, yet able to carry a far greater load than available cars. Then we worked out rates for single commodity unit trains that became the longest cross-country operation in the nation. Now 10 million lbs. of coil steel are being shipped to the midwest every 7 days.

plant site location.

Working with public officials and agencies, we've assembled over 35,000 acres of Southern Pacific land and reserved it for industry. The result shows in our ability to provide needed economic development and necessary environmental improvement all along our line. So if you haven't looked at us lately, don't look back. We're the railroad ahead.



Southern Pacific

—the transportation company that does things first.

BN predicts: "The unit-train concept will expand greatly..."

railroad some still think of as a granger road.

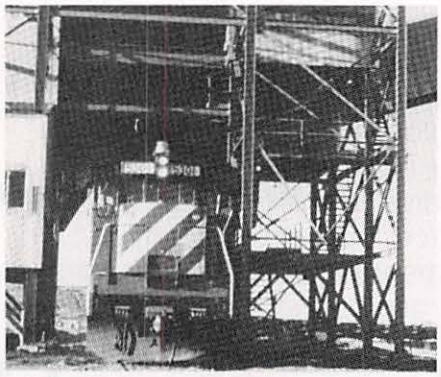
BN of course is in a fortunate position: Low-sulphur coal lies in abundance along its lines, and with the environmental revolution, low-sulphur coal was a valuable commodity even before the energy crunch in petroleum and natural gas gave new dimension to the definition of "black gold" and made it coal this time instead of oil. But BN, along with a number of other western roads, is not just riding with opportunity. It's seizing it. With long-term commitments for coal movement, BN and the others have moved quickly—to get the needed motive power and coal-carrying cars and to build the trackage needed to get the coal to market. Santa Fe was perhaps the first to build a significant stretch of new railroad, with its York Canyon line, over which coal has been moving since '66 to Kaiser Steel at Fontana, Calif. BN is now trying to get ICC authority to build the longest piece of railroad that's been built in many a year, 126 miles of line in northern Wyoming—and before very long, BN is going to wind up with coal standing as its largest tonnage- and revenue-producer.

(The entrepreneurial spirit isn't limited to just a couple of roads, where coal is concerned. NW, for one, has been building new lines to tap new mines. There's the not-long-ago-completed Waynesburg Southern. There are also the Muskingum Electric and the Black Mesa & Lake Powell, both of which will bring coal to market while they also serve as test-grounds for today's technology in electrification of railroad operations.)

● **Coal—and other things.** So far as the coal situation is concerned, Burlington Northern Vice Chairman and Chief Operating Officer Robert W. Downing has summed it up well, for his own road and generally: "In 1976, a truly accelerated pace of coal traffic will begin, when long-term contracts calling for the use and transportation of great tonnages of coal come into being. For example, BN will begin hauling coal to two utility companies in Texas, among the first coal-burning power plants ever to be built in what has heretofore been the exclusive domain of oil and gas fuels. But rising costs and uncertain future supplies of natural gas and petroleum decided the managements of these utility companies in favor of low-sulphur coal for their long-term needs. Such decisions are being made increasingly, and in all parts of the nation. The urgency of the fuel-supply situation is becoming quite noticeable, and low unit-train rates for coal provide an economical alternative to the power companies."

Low-sulphur coal, it should be noted, is not the only coal that is and will continue to be in demand. The higher-sulphur coal found in eastern and midwestern coal fields can be blended with low-sulphur coal to produce an acceptable mix. Moreover, there is a conviction—born of ever-increasing demands for energy—that overly-strict environmental standards may have to be cut back or delayed in application if the nation is to avoid living in a perpetual state of brown-out.

● **For the long-term...** How about the future in terms of railroads generally and in terms of more commodities going the unit-train route? The outlook, broadly, is not bad at all—and a few roads see great possibilities.



BURLINGTON NORTHERN has added or ordered more than 3,800 coal-carrying cars since 1970.

CP Rail sums up the feeling of a number of carriers: "Really, it all depends upon future opportunities. If the circumstances are right, we're ready, willing and able to muster a pretty fair degree of expertise."

On the cautious side are two of the "Family Lines"—with L&N looking for an increase in automated handling of lading but perhaps no major expansion of service; and SCL forecasting continued expansion though probably at a slower pace than in the past.

Frisco, Milwaukee Road, NW and Rock Island look for significant expansion of service—in RI's words, as "more shippers and railroads become aware of the advantages of such trains for the movement of a variety of commodities and gear their combined shipping and operating practices to utilize them."

Penn Central forecasts "steady growth for the unit-train concept. Where carrier efficiency and customer service needs can be married, the benefits provide the incentive for both parties to work out problems which may have been previously overlooked."

MoPac, looking at better service to the customer and better utilization of plant and equipment for the railroad as the primary benefits, says that the runthroughs and unit trains already established "have proved that service and utilization benefits can be realized."

ICG sees the unit-train concept "as playing an increasingly major role in our marketing strategy." Rio Grande, meanwhile, thinks expansion "is almost inevitable in the case of high-volume moves, to afford the benefits of unit-train profitability to both shipper and carrier."

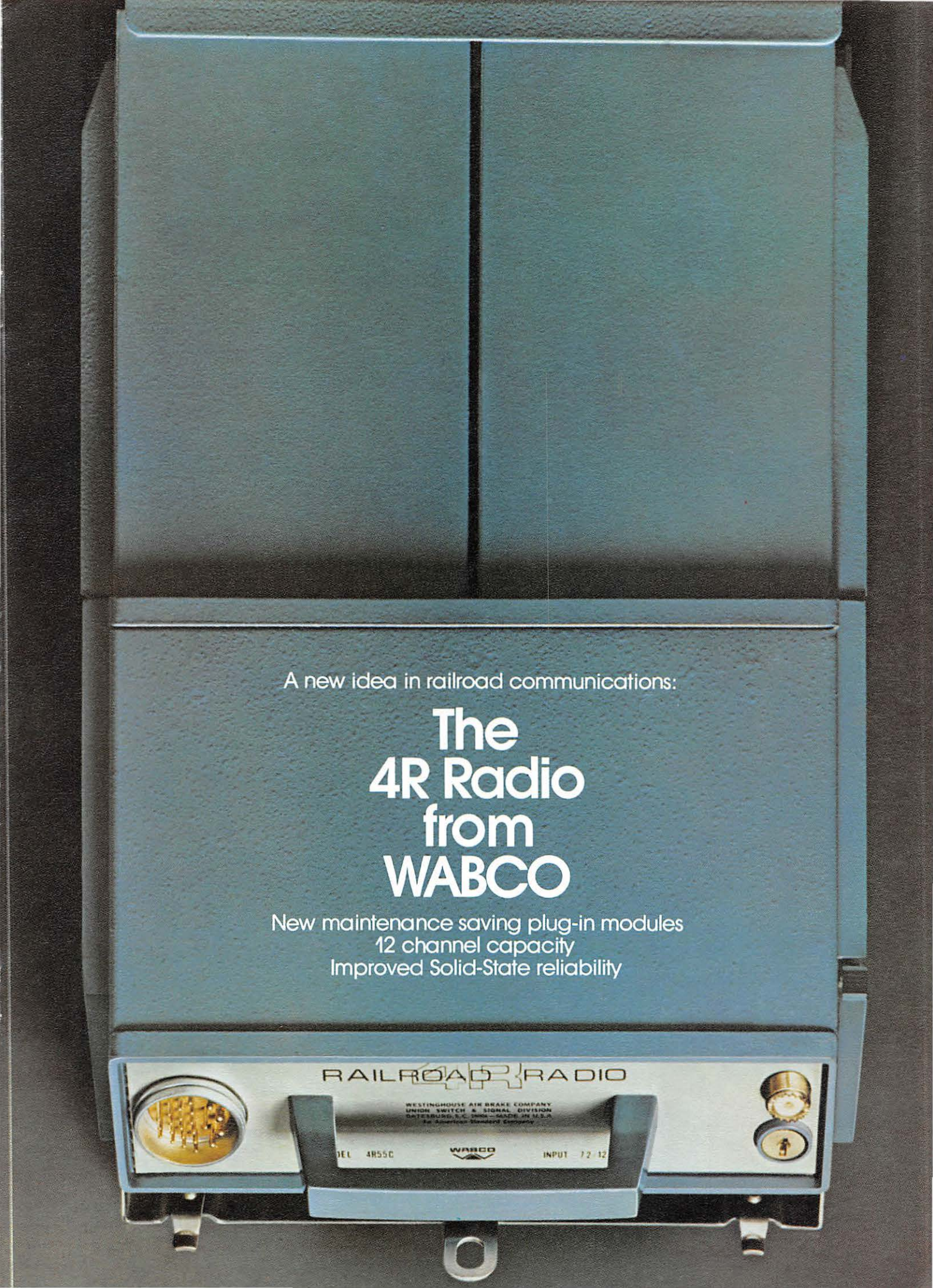
Southern takes a hard look and observes that "we don't see any use for unit trains, as we define unit trains, other than in the handling of bulk movements moving in very high volumes. Considering the tonnage that must be involved on an annual basis for even a minimum unit train, the possibilities are limited. But, we had a new unit train that started operations Aug. 27, and we expect another one to start operations late this year or early in 1974."

BN's view is that "the true unit-train operation has only begun to be used and the concept will expand greatly because of the inherent efficiencies and, in the coal business, because there is no other way to handle the large volumes of coal that will be tendered as a result of rapidly-growing energy demands. The expansion of the unit-train concept to other commodities is limited only by the willingness of shippers and consignees to make the necessary investment in loading and unloading facilities—and by the carrier's ability to complete the system within the dictates of sound economics."

Another major western line observes that unit trains now run the gamut from raw materials to finished goods—and as for what's ahead, "The energy crisis may well provide added future opportunities for expanded unit-train operations involving such commodities as crude oil and liquefied petroleum gases as well as coal."

And finally, Union Pacific—which regards the unit train as "in its infancy so far as usage is concerned." Knowledge being gained today, UP believes, will help to generate significant improvements and "noteworthy innovations" in unit-train operation. Moreover, "the most promising new developments may come in the area of lesser-volume shipments and require numerous adjustments on the part of carrier and customer, to realize the total efficiencies of the 'hybrid' unit train."

Put it all together and what does it mean? In part, at least, it means that the unit train and the broad trainload concept have only begun to do what they're capable of doing—for railroad, for customer. ■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New maintenance saving plug-in modules
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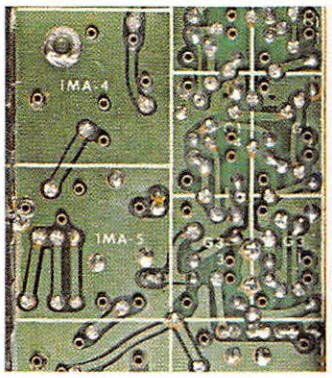
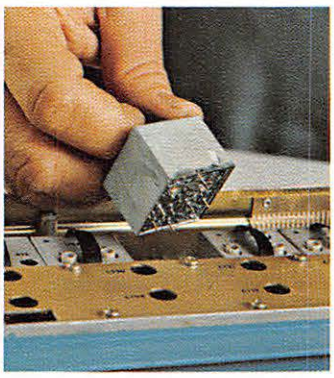




The new 4R Radio puts everything you want in a radio into a more versatile package.

Size: The 4R is 3 11/16" high; 10 5/8" wide and 16 1/8" long. It occupies 633 cubic inches.

Weight: 23 pounds light.

Modular: The 4R Radio was designed from the start for easy, fast maintenance. In radios, that means plug-in modules and the 4R is full of them. This means you keep your radios in service longer, and, when maintenance is needed, it requires simpler techniques... less maintenance skill for minor repairs. You can remove the transmitter, receiver, or power supply from one 4R and put it in another. Or, put it in a 3R series radio. Whatever it takes to stay in service.

Transmitter

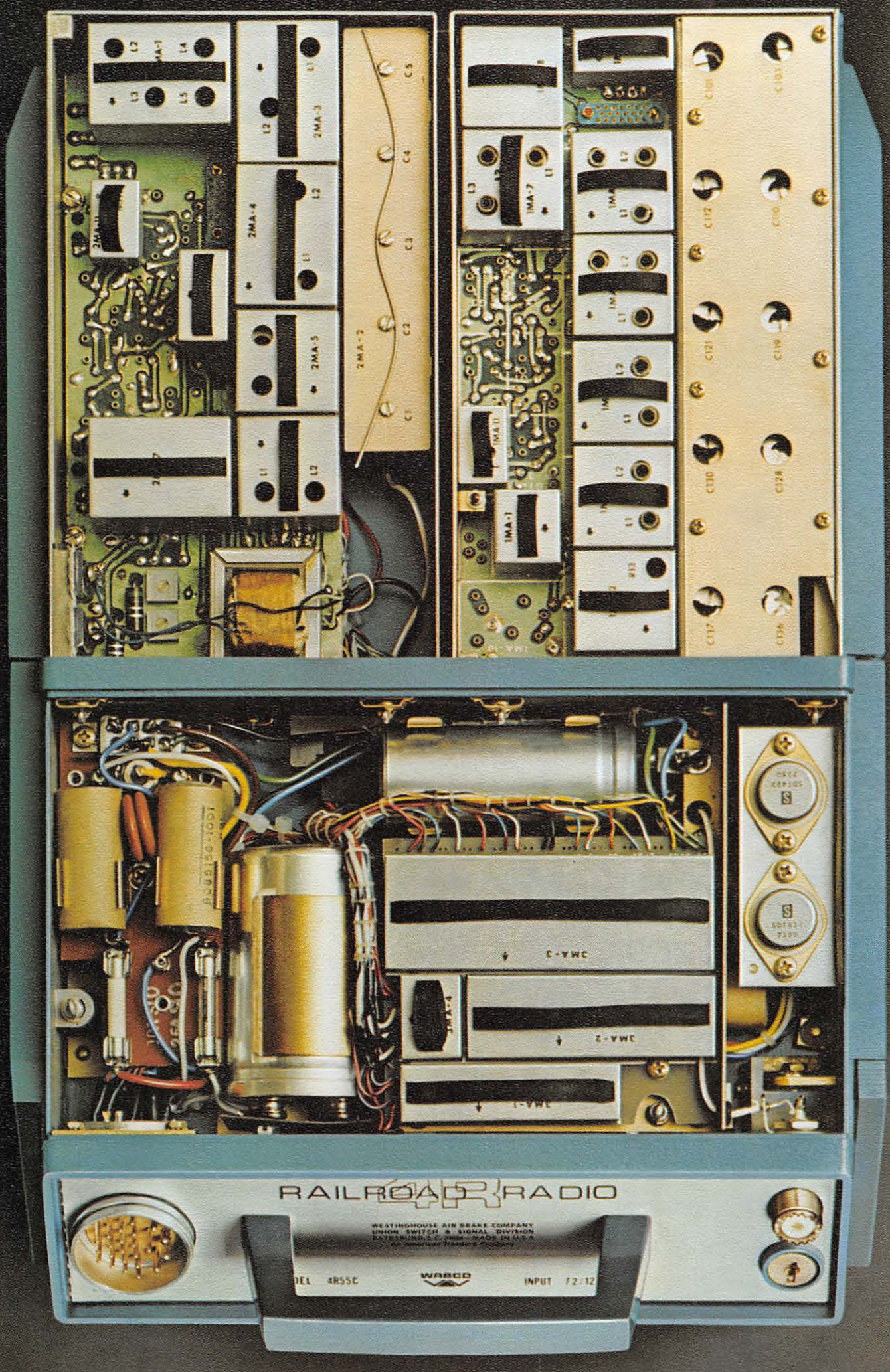
Broadband Design: The transmitter in our 4R Radio allows operation to full specifications with any channel spread within the railroad band. And you don't have to retune to change channel frequencies within the railroad band. Up to 12 channels are available (optional) and plug-in modules make field conversion easy. The 4R's transmitter is continuously adjustable from 10 to 40 watts.

Receiver

The 4R's dual conversion-dual crystal filter receiver has a frequency range of 148 to 174 MHz in a single model. Audio output is 10 watts. Up to 12 channels are available (optional), and plug-in modules make field conversion easy.

Power supply

The 4R power supply has only 2 transistors. There's less likelihood of problems with the 4R in the future. Our 12-volt model has series polarity protection so the unit won't blow a fuse. On our 72-volt model, line to ground breakover is 3000 volts. Our plug-in Time Out Timer is standard, not an extra cost option.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The complete 4R Radio package consists of everything you need for the following applications: Locomotives, Cabooses, Base Stations, Base Relays and Repeaters, Automobiles, Transit Vehicles, Maintenance-of-way Vehicles.

Here is how we identify various models:

4R25C 12V DC Cabooses, autos, maintenance-of-way equipment, trucks

4R45C 32/12V DC Transit cars, autos, business cars, maintenance-of-way equipment

4R55C 72/12V DC Locomotives, cabooses, transit cars, autos

4R65C 117/AC/12V DC Base stations, autos

For more detailed information on the 4R or any of its components and accessories, see your WABCO sales representative.

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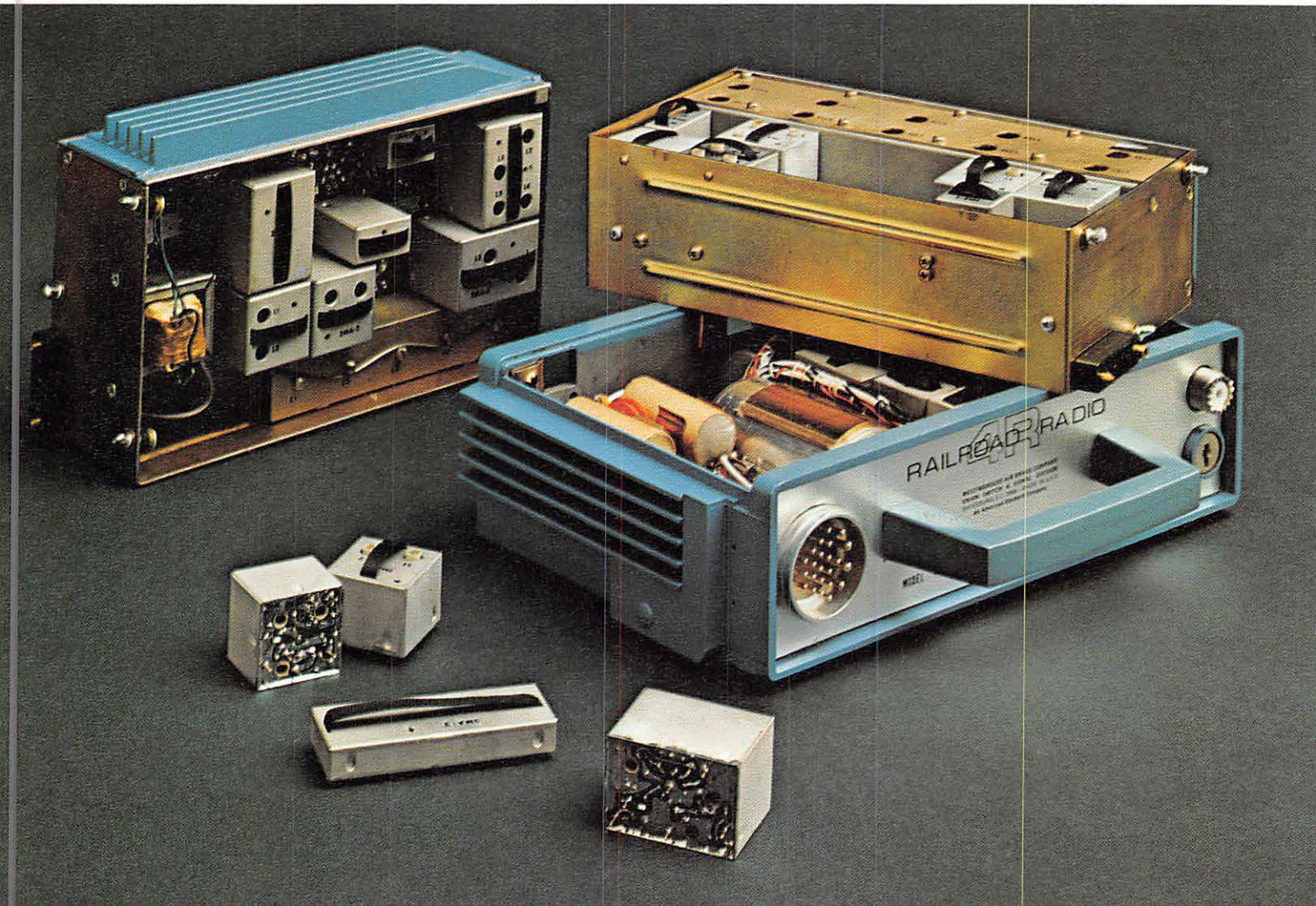
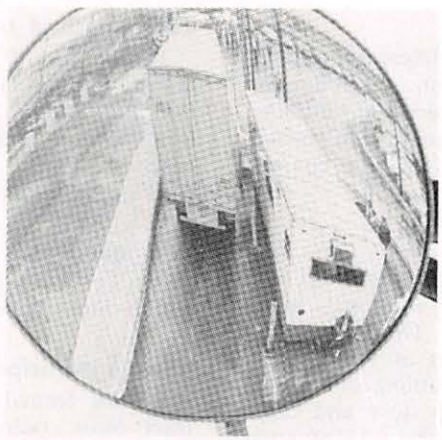


CONTROLLED ACCESS AND EXIT at Croxton terminal with careful examination of trailers and documents are reducing pilferage.

Tighter security cutting EL piggyback losses

Erie Lackawanna, currently handling over 150,000 trailers and containers annually, expects that soon 25% of its freight revenues will come from piggyback service. Despite this rosy outlook, piggybacking has some big problems and for EL, pilferage and theft rank high among them.

In late August an improved electronic system for cargo security was placed in operation at EL's Croxton Yard piggyback terminal in Jersey City, N.J., which handles 600 trailers daily. The new facility was installed in cooperation with the U.S. Department of Transportation, which is charged with responsibility for cargo security, and with American Multi-Lert Corp., which designed the security equipment. Featured are closed-circuit television recorded on tape; electronically operated gates: photo recording of all bills of lading and other papers; and a sophisticated electronic device for detecting unauthorized trailer movements. A similar installation is scheduled for EL's Chicago piggyback terminal.



DOCUMENTS AND DRIVER are photographed (right) while TV tapes show the trailer; time appears on both records. Mirrors (above) permit inspection of the tops of loaded and empty trailers.

● **Smoother operation.** "In addition to its improved security implications, this could well be the answer to a smoother and more efficient operation of our piggyback yards," explains Gregory W. Maxwell, EL president and chief executive officer. "It certainly provides shippers with increased protection for merchandise traveling in piggyback trailers."

General Benjamin O. Davis, Jr., DOT assistant secretary for environment, safety and security, observed that "cargo protection has been an increasing problem in recent years, but we believe this new project is a big step toward improving performance." EL, he added, "has a good record for cargo security and this should improve it."

A year ago EL theft losses at Croxton were averaging over $8,500 a month. In December 1972, this had dropped to $428 with an earlier version of the Multi-Lert installation. Between removal of this system early in 1973 and installation of the new equipment, losses promptly went back up, this time averaging nearly $10,000 a month.

Security, according to General Davis,

(Continued on page 40)

It has never been so urgent to train and upgrade employes ——or so easy!

. . . Or so inexpensive!

Home-study courses, tailored to the different needs of the maintenance-of-equipment department, can develop skilled journeymen from your present force of unskilled labor. It can cost as little as $6 per month per trainee. The Railway Educational Bureau provides the courses, and does the grading.

Many railroads use it!

The Bureau already has formal arrangements with about a third of the Class I railroads, and, with many industrial and other short-line roads. The completion of four-year courses qualifies apprentices as journeymen. Some roads use accelerated programs, turning out skilled machinists, electricians, carmen, car inspectors and other craftsmen in as little as three years. In the case of especially responsive students, two years is sufficient for the regular four-year course. Many other railroads use shorter REB courses for upgrading and refreshing. The Bureau also offers four two-year courses, as follows: Locomotive Engineers, covering diesel-electric equipment and air brakes; Locomotive Electrical Equipment; Locomotive Mechanical Equipment; and Car Inspectors and Carmen.

Railroads and trainees get feedback

Instructors of the Railway Educational Bureau, all active railroad men themselves, grade students' examination papers and make individual comments and suggestions to the students when such help is needed. In the case of formal, company-sponsored programs, the railroad gets a monthly report of each student's progress.

Who qualifies?

Any railroadman. Courses are written for employes with a high school level of education.

How to participate

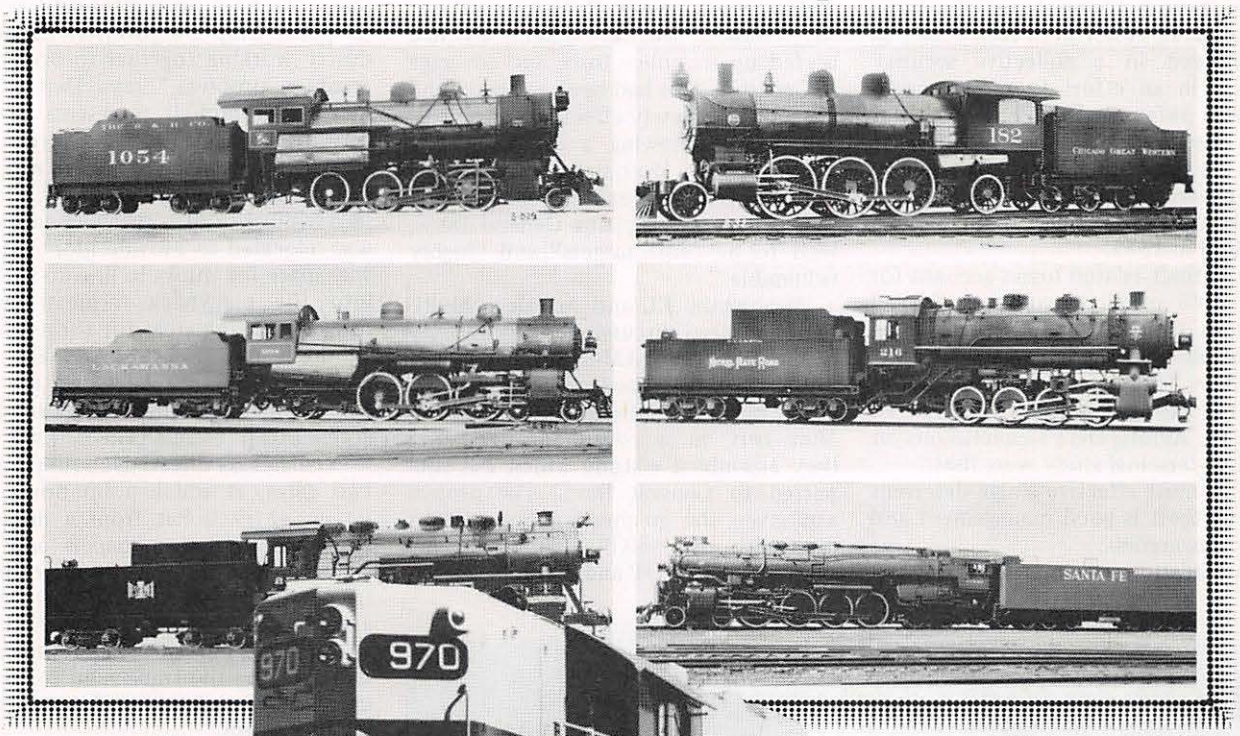
Besides formal apprentice training programs on a contract basis, railroads may help an employe by paying half his monthly tuition, or all of it, or by reimbursing the employe on successful completion of his training. Or they may authorize payroll deductions.

For more information

Write now, or phone, Reid Kenedy, Railway Educational Bureau, 1809 Capitol Ave., Omaha, Nebr. 68102, telephone (402) 341-7889.

Railway Educational Bureau

From the whistles of the past . . .



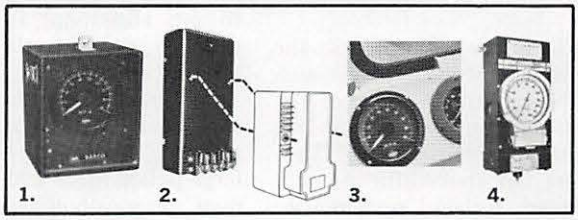
Photos courtesy of *The American Steam Locomotive* (Midwest Rail Publications) and *Trains Magazine.*

come the signals of the future

Your past is our past . . . and vice-versa. Since 1900, Barco has supplied America's railroads with quality products. And, as times (and trains) have changed, so has Barco.

Your future is our future . . . and vice-versa. While proud of our service in the past, Barco feels that the "Golden Age of Railroading" is *not* behind us . . . it's ahead . . . up the tracks, over the mountain . . . because *over 200 million Americans never needed railroads more.* It is this belief that brought Barco into Railroad Electronics. It is here that we see our greatest opportunity to help railroads provide even better service and safety to a rapidly changing and growing America. Aeroquip, Barco Electronics, 500 N. Hough Street, Barrington, Illinois 60010, *a subsidiary of Libbey-Owens-Ford Co.*

Barco Electronics



1. Barco SIS 400 Speed Information System—the most advanced and reliable electronic speed indicating and speed recording system available. Options include: remote indication, overspeed control and dual range indication. **2. Barco Automatic Reset for Ground Protective Relay**—automatically resets after nuisance type grounds—locks out for protection from serious trouble. **3. Barco 500 Series Rapid Transit Speed Information System**—is so accurate it can keep car doors from opening at speeds above 2/10 MPH. **4. Barco Mechanical Speed Indicator and Recorder**—the standard of the industry since 1918. Options include: remote indication and overspeed control.

Aeroquip

BARCO ELECTRONICS

Circle 9 on coupon page 57

(Continued from page 37)

is "a transportation industry problem." Early in 1972, seven interstate motor carriers having terminals in the same high-loss area of northern New Jersey as EL engaged in a collective security program in an effort to reduce cargo theft and pilferage. DOT's role was that of an observer; it also contracted for a report on the results of the experiment. Theft-related claims for the seven terminals decreased from $527,00 in 1971 to $244,000 in 1972.

While theft-related losses account for about 40% of all cargo losses for all causes in the trucking industry, some 80% of all theft-related losses are categorized as "shortages" with only about 20% reported as theft, pilferage or hijacking. Among DOT's conclusions on the truck-terminal study were that:

—The most effective single deterrent to cargo theft is good management and security awareness;

—Application of improved security techniques brings about reduction in theft-related losses and has an impact on all other cargo losses.

● **Electronic answer.** Prior to putting in its electronic security system, EL had beefed up its police force and coverage at Croxton. This had become costly and was not completely effective. Two years ago DOT, following a cargo security conference in Washington, initiated a full-scale attack on railroad cargo losses. Railroad yards, explains General Davis, tend to be "soft targets" and "highly vulnerable."

Meanwhile, EL and American Multi-Lert had been discussing the possibility of installing the AM-L advanced electronics security systems for Croxton. The railroad subsequently engaged Multi-Lert as a consultant. Together they assembled a study which was submitted to General Davis. The project was given the go-ahead a few months ago, with the $50,000 funding being shared by EL, DOT and AM-L.

Today, General Davis sees the EL facility as a "high target" for thieves and loss figures seem to substantiate this. "We have an outstanding example of partnership of government and industry working together to overcome a common problem," says Davis. "Even more important, it represents the concern of top management of Erie Lackawanna to recognize a problem and to do something to overcome it."

● **Terminal tour.** The revised facility was relocated to provide more off-highway space for trucks to line up for entry into the piggyback terminal and to provide parking areas for those working in the yard. The yard was also completely fenced in, except on the track side, so that highway vehicles are denied access except through the new gate.

Vehicles are directed inbound through two gates, at which point drivers pick up an entry ticket from a dispensing machine, have their papers and loads checked, and the vehicles are inspected from roadway to roof, the latter through a set of strategically located mirrors. Drivers are directed to the terminal area for dropping the trailer and for picking up an outbound trailer, if that is part of his assignment.

Upon leaving the yard, the vehicle is again inspected and the papers are checked by a police officer, during which time a photo record is made of papers and driver and a television camera is making a record on tape. This information is available for any subsequent investigation that might involve the driver, tractor or trailer. Electronic sensors buried in the pavement raise and lower the entry and exit gates as the vehicles move across them. Gates can also be raised by remote radio control.

Also included in the system is a Multi-Lert Watch-Guard service which consists of electronic devices fastened temporarily to trailers if they contain high-value ladings. EL has 20 such sensing devices which are located in four zones and signal automatically if there is any movement of the trailer such as that resulting from attempts to open a door or back on a tractor. Movement of a Watch-Guard equipped unit is transmitted to the gate office, to EL's police headquarters, and to the Jersey City police department.

Robert Gantner, president of American Multi-Lert, while identifying the EL Croxton installation as the first on a railroad, reports that his firm has eight more in truck terminals. Three years ago AM-L started a market study of cargo security and today is moving ahead on a variety of techniques. He says the key to the individual trailer security devices is the inertial guidance systems which have come from the aerospace industry. Gantner estimates that theft losses in all transportation run in the area of $2 billion annually. ■

Spotlight on theft and vandalism

In Denver this week, the Intersociety Conference on Transportation, sponsored by the American Society of Mechanical Engineers, will focus attention on the problem of railroad theft and vandalism. Donald L. Nelson, director of security for the Penn Central, prepared a paper for the conference on that carrier's efforts to cope with crime—particularly in the New York City area where, in 1971 alone, there were 1,329 reported thefts from box cars; six box cars were completely emptied of their contents; there were 80 car and property fires; merchandise valued at $880,000 was stolen; and 2,134 persons were arrested in connection with these incidents.

"These offenses occurred despite the fact that our security force was augmented by New York City Police Department personnel in platoon and task force strength," said Nelson. "These incidents were not spur-of-the-moment or single-handed, isolated occurrences. They were well-planned, vicious and meticulously executed in a minimum of time and at minimal risk to the perpetrators."

But in 1972, added Nelson, the picture changed for the better: "During an intensive campaign, including fine assistance by our operating department personnel, reported thefts were down 74%, and the value of these losses was decreased by 96%."

Trespassing continues to be a major problem, said Nelson, with about 200,000 trespassers being ejected each year from PC property. Each one, he noted, represents a potential claim against the railroad, due to possible injury. Also of severe consequence, he said, are incidents involving the placing of obstructions on rails, and tampering with switches and signals. Such incidents, he pointed out, result in derailments which can cause personal injuries as well as considerable loss and damage to freight.

Nelson said PC's crime prevention efforts could be aided by special action of Federal and local governments:

"Since we are dependent upon the help of public police in the protection of our property and shipments moving in interstate commerce, we would like to see additional Federal funding of police departments on the local level. . . .

"Consideration should be given on the local level to tax credits for the railroad, due to our maintaining such a large police force with what are actually dual responsibilities. . .Since our railroad police serve not only their employer but also society in general, we believe that they should be able to participate in training programs available to the public police. . .

"We would like to receive more realistic handling and disposition of the criminal cases we bring in many of the courts throughout our territory. I am speaking mainly of the long delays and the so-called 'revolving door' justice and 'slap-on-the-wrist' sentencing. . .

"We would welcome anything that can be done along these lines, to assist us in carrying out our assignment."

Our 5 psi car. It unloads anywhere the rails meet the road.

Just pull the trucks up to a siding and leave the rest to the ACF 5 psi car.

Our 5 psi operates off the truck's blower. So you can unload fast. Without a pressure sled, without a portable transfer unit, without any contamination, without any problems.

There's hardly a dry bulk lading this car can't carry. Flour, cement, diatomite, plastics, clay. You name it, the car can carry up to 5700 cubic feet of it.

And getting a shipment into our 5 psi car is just as fast and easy as getting it out.

What's more, the entire car is designed to provide the utmost in sanitation. With smooth, clean-bore interiors. And no sills, ledges or corners to cause any hang-up.

ACF's 5 psi car. It turns a simple siding into a high-volume unloading site.

ACF Industries, Incorporated,
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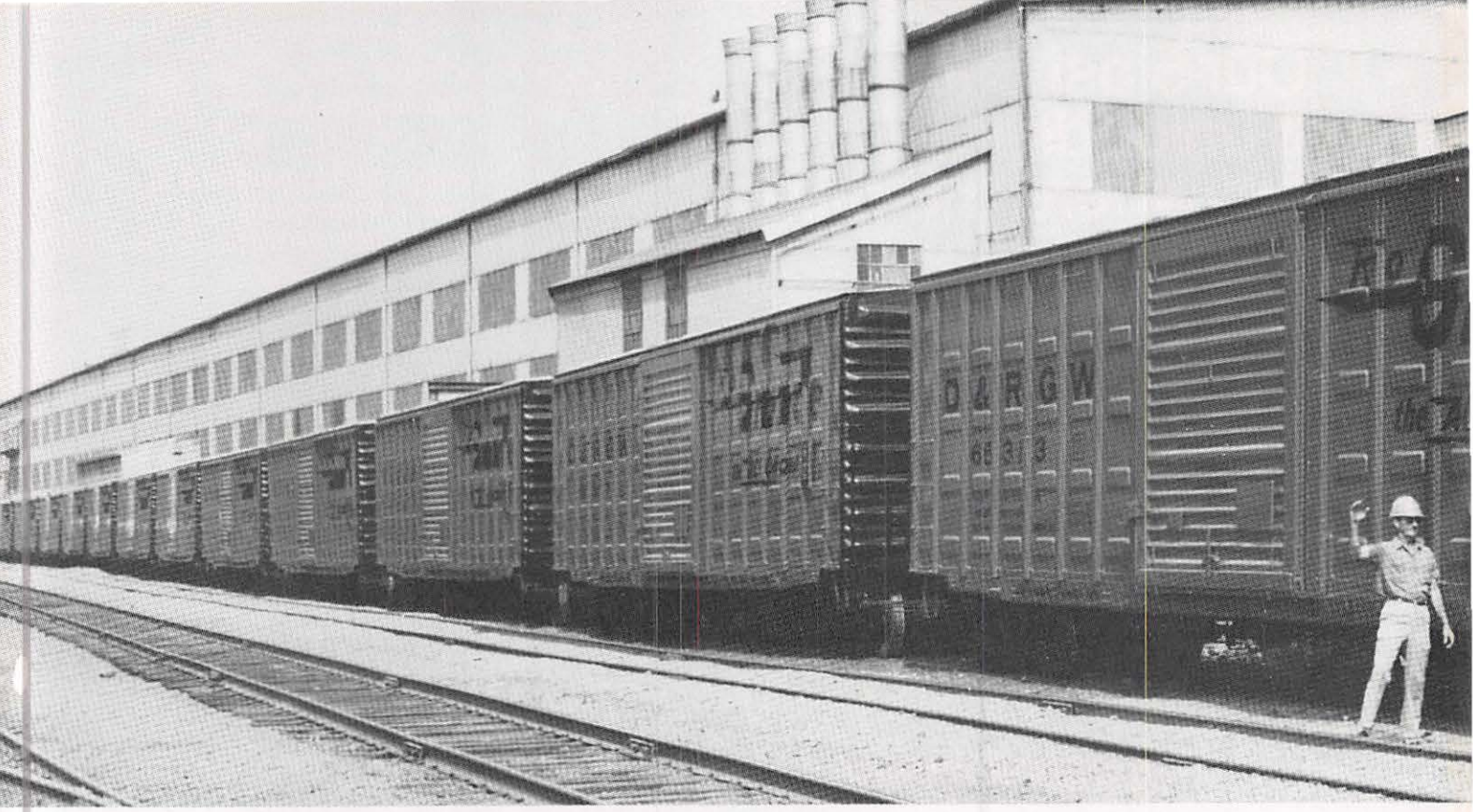


"MARKETING THROUGH EQUIPMENT" program of Rio Grande involves ordering type of equipment (like these 50-ft cushioned cars built by ACF) meeting shippers' particular needs.

Customer-oriented cars play key role

Aided by highly sophisticated studies of the customers' transportation needs plus the accurate problem-solving capabilities of the computer system, the railroads of today are able to employ a much more sophisticated brand of marketing strategy than was possible before. The hearty clap on the back, the dollar cigar, the joke and the free lunch will no longer take the place of actual service performance.

What it takes these days for the railroad to attract and hold the shipper's business is a far greater finesse in the transportation marketplace. Simply stated, this means gaining a detailed knowledge of each shipper's transportation needs and then exhibiting a willingness to provide the type of equipment and service that will fulfill those needs.

Different railroads are taking different approaches to increasing their business. Denver & Rio Grand Western, for example, has established a "Marketing Through Equipment" plan to gain and keep customers, and it is paying off handsomely. The Denver-based road is often classed as a "bridge road" with close to 50% of its business coming from highly competitive overhead transcontinental traffic. Therefore, the equipment needs of offline shippers are studied as closely by the road's marketing department as those of on-line customers.

● **Off-line shippers important.** "We're trying to design the type of flexibility into our car fleets that will enable us to match the cars with both the shipper's and the receiver's needs—off-line as well as on," advises Clarence Lennig, vice president-traffic. Evidence of this desire to maintain a car fleet with flexibility is Rio Grande's 1974 equipment acquisition program which will bring 572 new cars onto the freight car roster:

—70 4,700 cubic foot, 100-ton covered hoppers.

—70 3,000 cubic foot, 100-ton covered hoppers.

—115 100-ton open top hoppers.

—150 60-foot, 100-ton insulated box cars (14-foot single plug door).

—150 50-foot, 100-ton insulated box cars (14 foot single plug doors).

—17 car-sets of Stac-Pac auto containers.

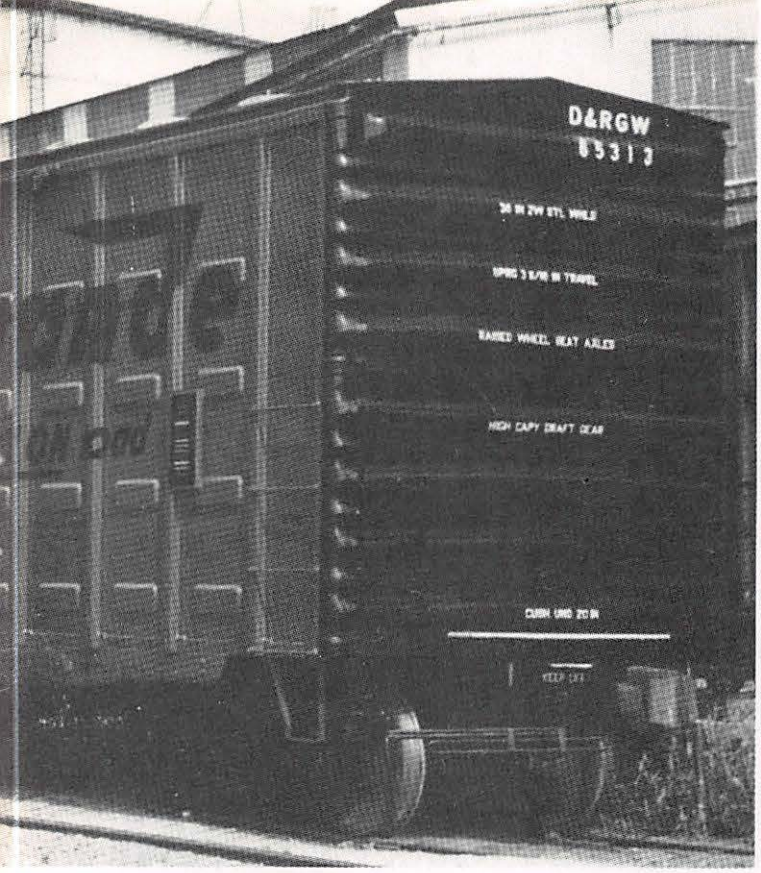
Rio Grande is investing an amount equal to about 12½% of gross revenues in this customer-oriented equipment. The 300 insulated cushioned box cars will be equipped with dual pneumatic bulkheads and will increase the size of the road's fleet of these specially-equipped pneumatic bulkhead cars to 500. Some of these cars will be in free-running service, a practice Rio Grande has discovered to be helpful in acquiring traffic routings.

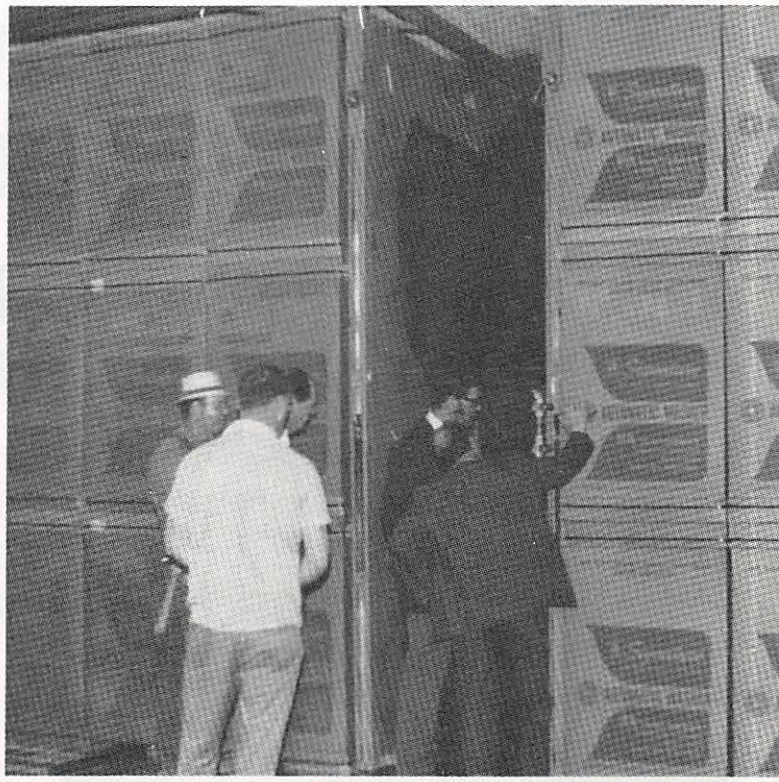
The relative youthfulness of the Rio Grande car fleet is giving the "Marketing Through Equipment" program a big boost. The insulated DF box car fleet, which numbers 1,436 units, has an average age of less than three years. The jumbo covered hopper car fleet has an average age of only 3½ years.

● **Marketing has a strong voice.** Selection of the sizes and types of equipment that will be added to the car fleet is made jointly by the operating, mechanical and marketing departments of the railroad. Since it has a better understanding of the equipment requirements of off-line shippers, the marketing department has a strong voice in the choice of special components and certain design features for the off-line cars. "In most instances," explains Larry R. Parsons, manager-equipment planning, "the commercial specifications for new equipment—such as the use of 14-foot doorways with a single plug door on insulated box cars for a specific shipper—will be written by our department.

"It is our objective to get the highest utilization possible from new cars and the best way to do that is to design the cars to match the shippers' needs."

Naturally, Rio Grande can't afford to





SHIPPER OPERATIONS are studied in detail before requested investment in interior load restraining devices is approved.

in D&RGW marketing strategy

spend millions of dollars each year on new equipment without getting something in return for this expenditure. A goal of 18 revenue carloads for each car per year has been established. This goal hasn't been reached yet, but the traffic department is working hard on it. Utilization of the 10,000 cars in the Rio Grande fleet averages about 12 revenue loads per car per year, with the off-line controllable cars averaging 7.6 revenue loads per year, a very respectable level for this type of traffic.

● **One-tenth trip worth millions.** If the Rio Grande could get an extra one-tenth of a trip per month out of each car in its fleet, points out Parsons, this would bring in an additional $2.9 million in revenues annually for the off-line fleet alone. Little wonder, therefore, that special emphasis is being placed on utilization of equipment in the over-all marketing plan.

To help improve off-line utilization, Rio Grande introduced last year an "Inventory Control Report." Supported by information furnished by TRAIN, the national freight car information system, this report, advises Parsons, "allows off-line sales offices to plan so that all controllable Rio Grande cars terminating in an agency can be ordered—with the cooperation of the holding railroad—to various shippers before they are made empty at receiving locations."

To assure the effectiveness of the Inventory Control Report, seminars are conducted by Denver headquarters staff personnel to acquaint sales offices with procedures and with some of the special features of new freight cars that have been purchased and which may be arriving in their territories for unloading and reloading. Also, the off-line staffs are encouraged to work with car distributors in their areas to insure empty mileage is kept to a minimum. At the same time, the headquarters staff keeps the sales offices informed via timely action equipment reports of all equipment changes as well as special orders being issued by the ICC and the AAR. Salesmen get additional support from equipment assignment specialists also located in the road's headquarters.

● **Time to plan.** The Rio Grande's Inventory Control Report and its supporting documents provide sales offices plenty of time to plan an assignment for a car arriving in the sales territory for unloading. While the car is proceeding loaded into the territory, the sales office can be querying customers to see if they can use the car when it is empty. If so, movement instructions can be supplied to the destination railroad agent for disposition of the car once it is empty and it can then be routed immediately to the new assignment. This way, many idle days can be shaved from an expensive freight car's schedule.

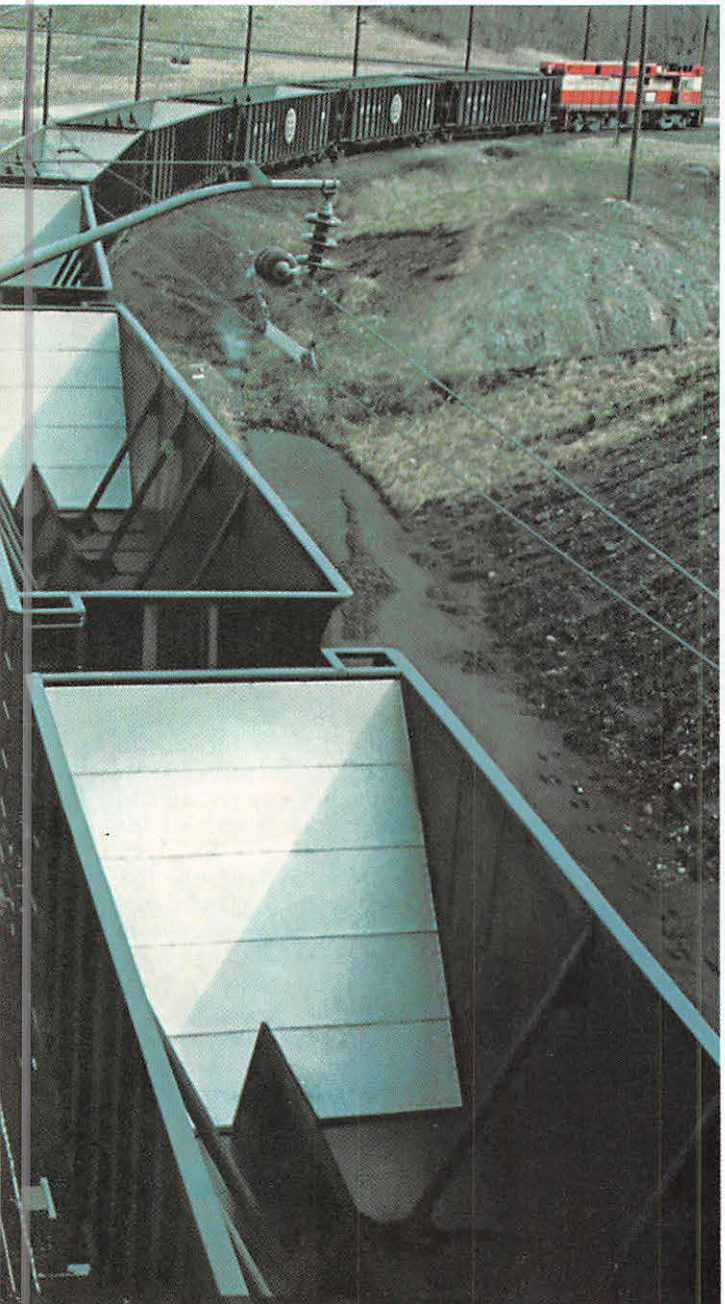
● **On-line shippers benefit, too.** Although Rio Grande may appear to be concentrating heavily on satisfying the equipment needs of off-line customers, this doesn't mean that on-line customers are being shortchanged. Due to excess freight car ownership, measured in terms of on-line need alone, the on-line loading patterns can be buffered via the off-line fleet. This is accomplished by loading the equipment from the Rio Grande toward the off-line customer. Another assurance that the on-line customer will be adequately supplied with equipment is the fact that up to 50% of the road's free-running cars get back to their home line in each quarter of the year.

Rio Grande, which in the early '60s championed the short, fast train concept as a marketing tool for service-conscious shippers, feels that freight equipment—the proper equipment to do a specific job—is equally important as a drawing card for rail transportation services. Judging from the $14 million which this moderate-size road plans to invest in new high-demand equipment next year, it is most willing to do a job for the shipper. ■

Long-run steel for a short-run railroad.

How cars of USS COR-TEN Steel are taking the 50-fold wear of an automated unit train.

Thirty times a week, this unmanned train and its identical twin shuttle back and forth along the 15-mile Muskingum Electric Railroad, carrying coal for the Ohio Power Co.



At the unloading end of the trip, each of the cars automatically discharges 100 tons of coal in 14 seconds.

The cars have been operating in this punishing service for over four years. Ortner Freight Car Co., who made the cars, estimates that they endure the equivalent of 50 times the wear of an average coal hopper car in railroad revenue service.

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USS COR-TEN A Steel forms a tight oxide coating on the unpainted surfaces inside these cars, and over scratches and breaks in the painted surfaces outside. It actually "heals" itself, to cut maintenance costs.

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USS TRI-TEN Steel, another of U.S. Steel's Family of Steels, is used for other highly stressed members, where corrosion resistance isn't so critical. It's strong and economical, so it helps cut both weight and costs.

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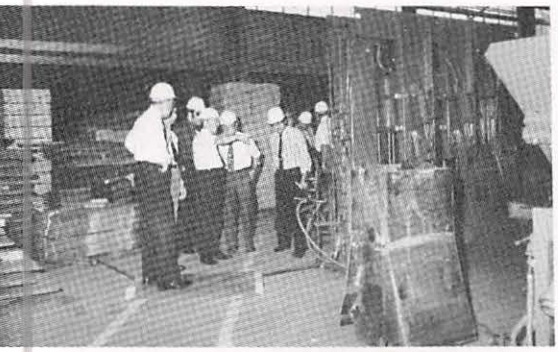
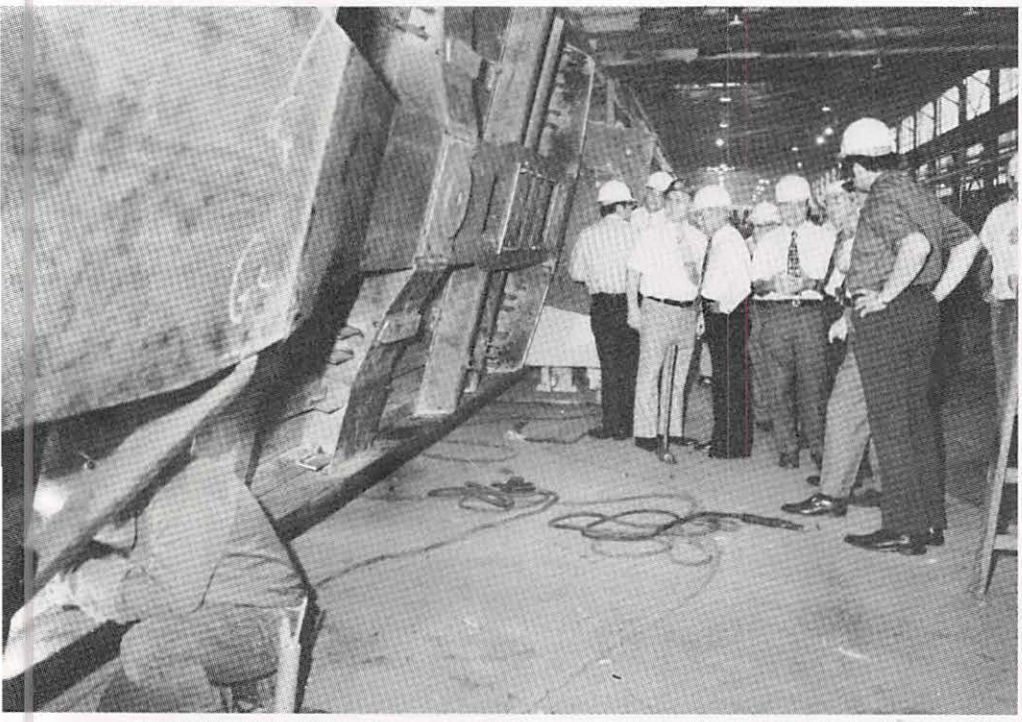


Pullman opens new line for TTX cars

FIRST "FLUSH DEK" car off new Bessemer, Ala., line gets builder's badge spray-painted by Pullman-Standard President Elwyn Ahnquist (right), who is assisted by TTX President Curtis D. Buford (center) and Plant Manager Clyde Horton.



SHIRT-SLEEVE TOUR of new production line by Pullman-Standard and Trailer-Train officials was part of opening-day events. The new line can turn out 16 89-ft, 4-in. piggyback flat cars during a single 8-hour shift, says Pullman.

For Trailer Train, which has had to pull out all stops in recent months to keep pace with the record demand for flat cars, the opening last month of a new multi-million-dollar flat car production line in Pullman-Standard's Bessemer (Ala.) carbuilding plant had to be one of the most welcome sights in the world. Capable of producing 16 cars in an 8-hour shift, the all-new mass production line should play a major role in relieving some of the pressure which peak levels of piggyback, auto rack and other flat car traffic have placed on the nation's flat car fleet.

A contingent of Trailer Train officers, headed by Curtis D. Buford, president, previewed the new P-S production line. At a luncheon following the tour of the line, Buford told business and civic leaders in the Greater Birmingham area that the new Bessemer facility "is destined to become an important part of Trailer Train's car acquisition plans."

Trailer Train purchases in 1973 are expected to total 7,000 cars worth over $150 million. With P-S, and other TTX suppliers—ACF Industries, Bethlehem Steel, and Thrall Car—pumping out new flat cars at an unprecedented pace, the TTX fleet of flat cars is expected to top the 68,000 mark by the end of November. Not only is Trailer Train the nation's largest non-railroad freight car owner but also the world's largest owner of intermodal and automotive equipment flat cars.

● **Flats in demand.** Lately, piggyback carloadings have been soaring along at a level about 14% above what it was a year ago, and the 33 railroads (and one freight forwarder) who own Trailer Train have been hard-pressed at times to meet the equipment demands which this high level of traffic has created. Meanwhile, the nation's automakers have been shipping new vehicles at a breathtaking pace, adding further to the flat car crunch. On top of all this, farm implement manufacturers, forest products firms and a host of other flat car users have been pressing railroads for more and more flat cars to meet stepped-up delivery schedules.

Thus, it appears that the new flat car line at the Bessemer facility has come along at a very opportune time. And, if the 6½% increase in flat car loadings predicted for 1974 hold true, the new line will be kept busy in months ahead furnishing new cars to meet this increase in traffic.

The new Bessemer facility does not mark Pullman-Standard's entry into the flat car market. P-S invested heavily in another all-new flat car production line at its Butler (Pa.) freight car plant back in 1958 and has been producing the long flat cars there at an almost ceaseless pace since then. As Elwyn T. Ahnquist, Pullman-Standard's president, was quick to point out at the Birming-

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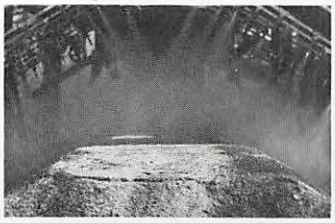

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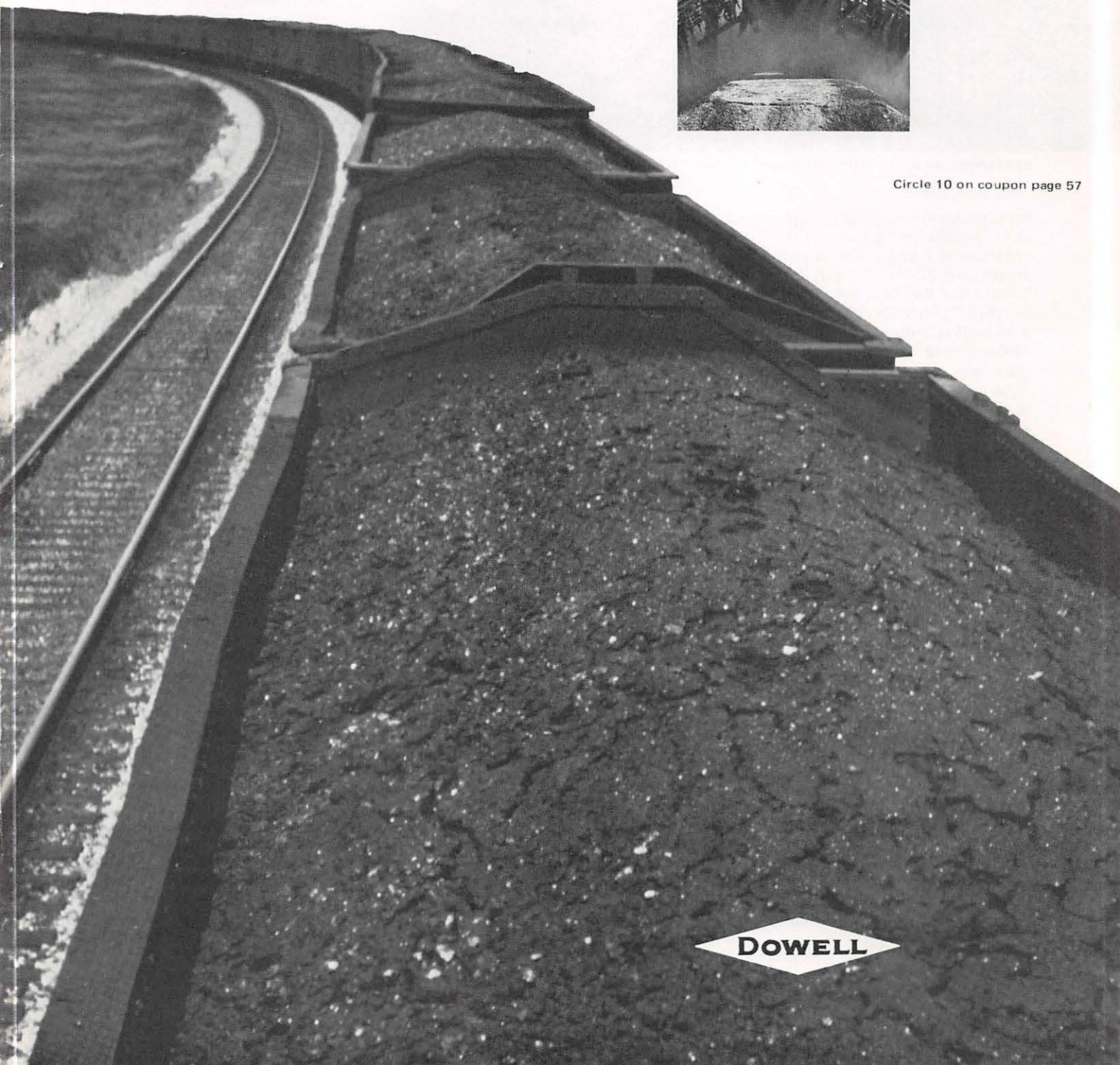
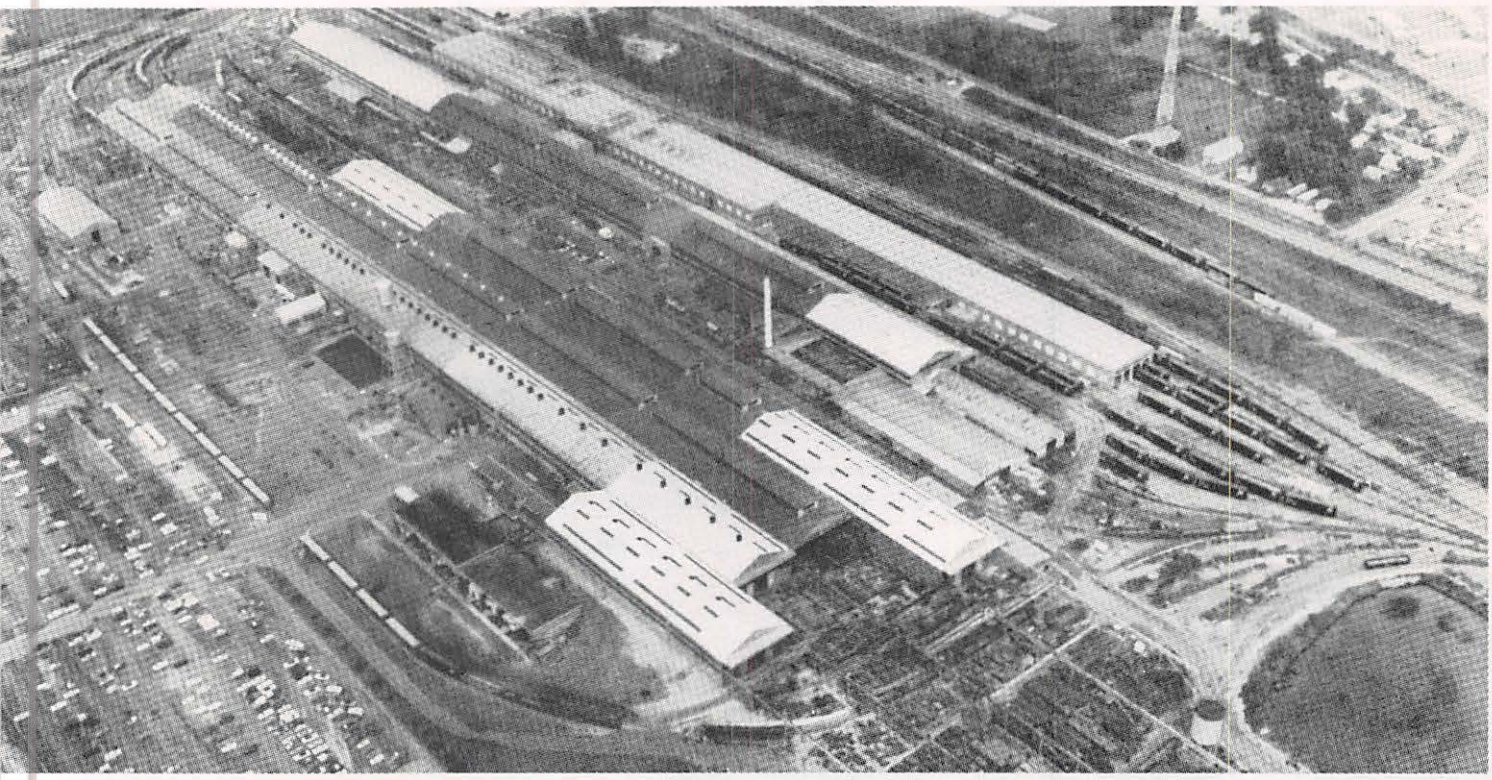




BESSEMER, ALA., PLANT, site of the new Trailer Train flat-car production line is largest freight-car building plant in the world.

ham luncheon heralding the opening of the Bessemer production line, "Pullman-Standard has already produced over 27,000 flat cars for Trailer Train since the first order was placed in 1958." Virtually all of these cars were built at Butler.

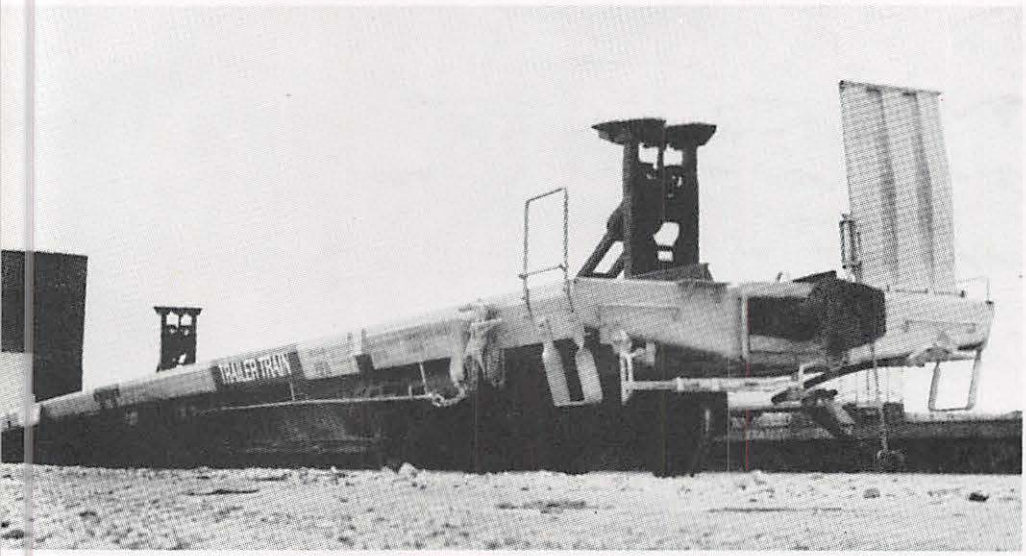
● **Converting to Bessemer.** The Butler plant will continue to produce certain types of TTX cars for a while yet, but there are strong indications that the Bessemer location will eventually become the sole producer of TTX flat cars so far as P-S is concerned.

At the present time, P-S engineers are working on development of new designs of low level flat cars which would be suitable for efficient production on the new Bessemer line. Until the new designs are completed and accepted, the Butler plant will continue to produce low level flat cars of an existing, time-tested design.

The low level car, which is 10 inches lower than TTX's standard level car, was developed in the 1950s to enable railroads to piggyback trailers in low clearance territories and to haul new automobiles on tri-level auto racks. The car has a box section on the deck at each end to house the draft gears. Those sections are causing problems today, especially for the tri-level enclosures which are becoming more and more popular for hauling new automobiles. P-S engineers are hopeful of being able to eliminate the box sections in the new low level designs they are working on.

● **"Flush Deck" improved.** Meanwhile, some important changes have been made in the new basic model "Flush Deck" standard level flat car in production at the Bessemer plant. Slightly heavier than earlier designs of standard level cars built by P-S, the new "Flush Deck" design features better grades of steel in key areas, more conservative design criteria with 30% better stress resistance, better strength balance in important sections, thicker deck material and a universal draft pocket design which permits greater flexibility, especially in selection of draft gears.

The new 1,800-foot by 90-foot production lines at the Bessemer plant and the modern jigs, fixtures, welding equipment and material handling devices installed along it allowed P-S engineers to make many of the changes in the basic car design. Heavy expenditures were made for new welding equipment for the line—48 automatic heads, with two huge fixtures each fitted with eight of these heads; 30 CO_2 semi-automatic machines; and 200 standard hand welding machines. Furthermore, there are two plate burning rigs on the line which each feature 10 burning heads. Large sill and underframe positioners are other important pieces of equipment that enable the line to produce the long 89-foot, 4-inch flat cars at the rate of 16 per shift. This production pace is, incidentally, almost double that of the firm's Butler plant. ■



PIGGYBACK CARS coming off Bessemer line are similar to this one, shown with hitches.

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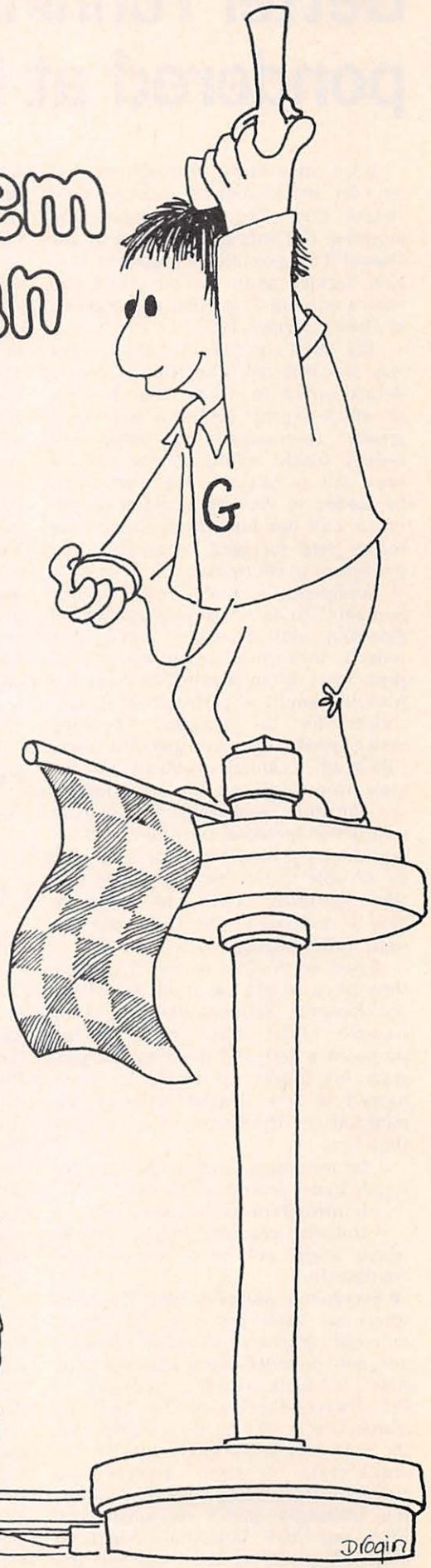

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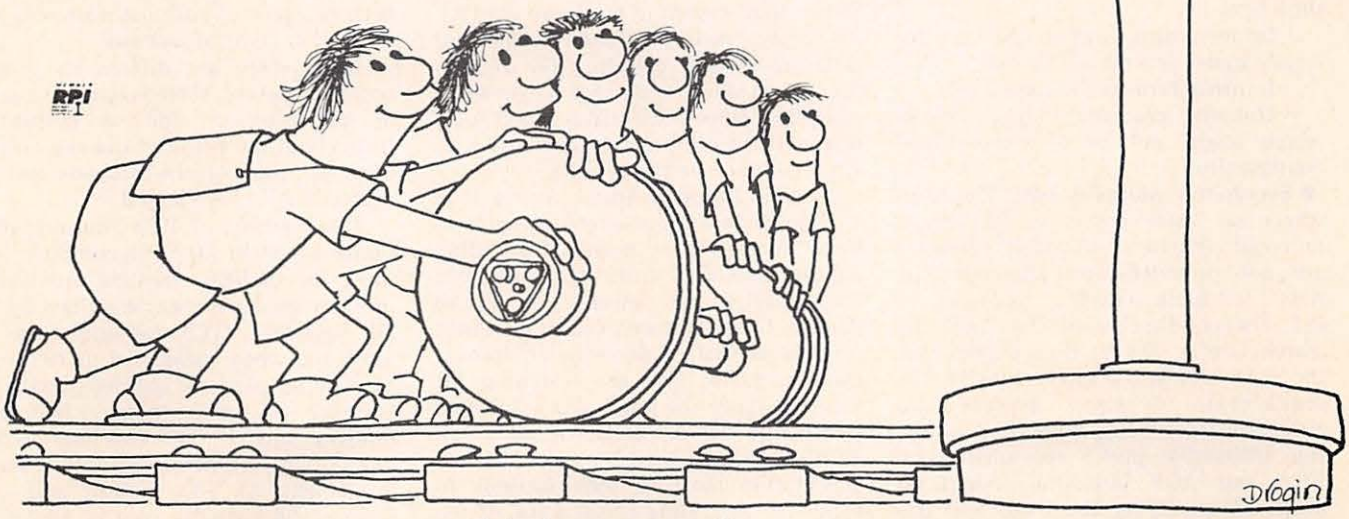

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Better running gear, and its cost, pondered at Dresser conference

What price might railroads have to pay for better running gear for their freight cars? The tenth annual Engineering Conference, sponsored by the Dresser Transportation Equipment Division, tackled again a topic which had been a concern of the first such meeting in 1964 at Depew, N.Y.

The 1973 conclusion, if there really was one, differed little from that of a decade earlier. In effect, after the years in which car-ride problems have been greatly accentuated by faster and heavier freight trains, no one has yet been able to quantify just what might be needed in the way of better performance and just how much would have to be paid for each incremental improvement in car trucks.

Conference keynoter W.M. Jaekle, Southern Pacific's vice president of engineering and research, noted that today's four-wheel truck consists of parts from different suppliers operating without benefit of performance specifications for the assembly operating under specific cars over specified track. "Railroad technical problems are the same worldwide and the solutions are also the same," said Jaekle. "No one has a corner on technical knowhow." SP has found international technical exchanges so valuable that it has now joined UIC (the European AAR), to be more closely associated with UIC's research organization, ORD.

Based on analysis of the AAR-style three-piece freight car truck for SP by the Japanese National Railways at its research center near Tokio, SP has proposed a test and development program for freight car trucks to be financed by the Federal Railroad Administration. The SP project would have three goals:

—Improvement in existing trucks for service under general-service cars;

—Improved trucks for special cars;

—Running gear for freight vehicles which might not be of conventional configuration.

● **Everyone's whipping boy.** The four-wheel car truck comes in for almost universal criticism, although designers are not provided with adequate "inputs" for basic redesign, according to H.I. Dwyer, director of the AAR Research Center. Dwyer does expect that the AAR/RPI truck safety project, the track/train dynamics project and analytical work being done by Washington University under sponsorship by FRA and ACF Industries, might do much in specifying the loads and frequency of loading of the running gear under freight cars in service. Dwyer noted that the standardization imposed on designers because cars must operate in universal interchange has restricted the engineering innovation in truck development.

The track/train dynamics study has, so far, shown no easy solution to truck problems, according to L.A. McLean, assistant chief of equipment engineering for the Seaboard Coast Line. He called most of the recent truck component developments "crutches or gimmicks" so the standard AAR truck can operate in today's new environment. SCL testing, in cooperation with Pullman-Standard, has shown that truck parts, which once lasted 15 years and today wear out in less than 5, are affected primarily by "hunting," and a primary reason for this is the absence of "lateral" in the rolling bearing assembly.

● **Lessons from abroad.** Dr. R.W. Sparrow, deputy laboratory director of British Rail, explained that correct car suspension must control actions of both the carbody and wheelset. Much of the BR effort at improving truck (bogie) design is aimed at providing guidance in curves through different tread contours, rather than resorting to flange contact. He noted that such ride refinement activities require coordination of both the mechanical and civil engineering disciplines since track stiffness and roadbed inertia are intimately involved with anything done on the vehicles.

> The problem is to pinpoint what is needed for better truck performance

Federal Railroad Administrator John W. Ingram told the assembled engineers that "we have a lot to learn from other nations—and they from us." He added that foreign rail interest in FRA's Pueblo, Colo., research center is almost as great as that of domestic equipment manufacturers. "We are searching for ways to apply the latest state-of-the-art technology to *all* areas of the U.S. railroad system," said Ingram. "It is my expectation that we will continue to enjoy the unstinting cooperation of the engineering profession in our efforts to improve and modernize the American railroads."

Dresser Industries Board Chairman John Lawrence observed that "when you consider all the waves around them, it is surprising that so many railroads have managed to keep their heads above water. Cost reduction programs and alternate sources of income have had a part to play, but I think that advanced technology and engineering have done more to keep the railroads afloat than anything else."

Lawrence emphasized that, after removal of political barriers that impede railroad innovation, "the critical importance of technological innovation must be brought home to railroad chief executives." He questioned whether all the industry's own efforts should be concentrated in the AAR, and called for a look at a separate railway research institute able to focus on broad R&D programs. He noted that this is the course taken by the electric utilities, funded with an initial budget of $100 million. Even apart from the Federal R&D funding for railroads (such as the $80-million investment in the Pueblo center), continued Lawrence, "there is much railroads can do to raise the level of R&D. Historically they have not supported it; from now on they are going to have to do it."

The commonality of interest on the part of all the world's railroads was also discussed by J.H. Lloyd, president of Missouri Pacific. "The international scope of industry problems and the shrinkage of the world means that all railroads have much more in common than even before," he said. "Some nations have already looked at the balance sheet of national resources and decided in favor of railroads."

While there are differences in corporate structure, there is much the same in the business side of railroading throughout the world. "And engineering must be part of the business side of railroading," Lloyd added.

Development of MP's Transportation Control System (TCS)—a computer network for on-line, real-time monitoring of every car move—was described by the MP president. TCS got under way in 1965 and when completed in 1975 will provide for pinpoint control of what are currently 450 daily trains, 1,000 locomotives and 70,000 cars on 12,000 miles of line. To date, TCS represents an investment of $33 million and ultimately will virtually control allocation

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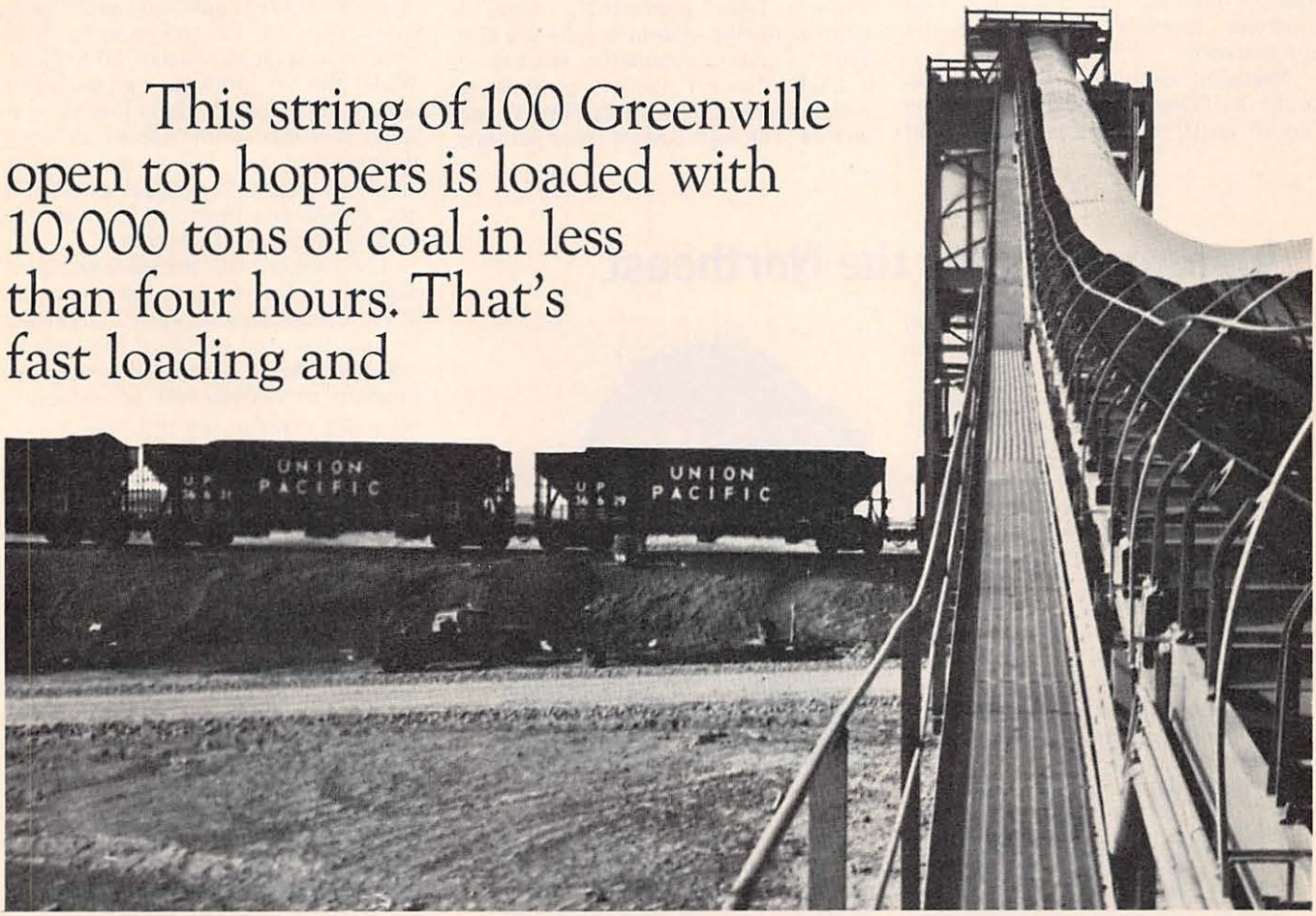

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of all MP resources as it strives to improve both performance and profitability.

● **High-cube, heavy cars.** Investment in high-cube and heavy rail equipment dominated the closing session of the Dresser Conference. Harry S. Meislahn, manager of strategic planning for Illinois Central Gulf, noted that "heavy investment in new equipment has failed to produce any improvement in the industry's financial rate of return." Its problems, however have been greatly compounded.

Meislahn continued: "There appear to be sufficient doubts about jumbo cars to justify renewed investigation of the crucial relationship between heavy loading and track deterioration. The AAR. . .is reopening this investigation and the project deserves our support as a high-priority undertaking.

"Future studies on optimum car size would almost surely benefit from a systems approach encompassing not only track effects but also other areas. The industry is also confronted with lack of pricing freedom and its failure to improve labor productivity. Until a rational pricing system is achieved that allows a zone of commercial freedom, it is likely that car size will continue to reflect unadjusted ICC Rail Form A cost factors. The high cost of labor per train mile is another car-related problem because it has caused the industry to operate even heavier and less frequent trains with disastrous effects on service quality and market share. . . The deteriorating condition of the industry's trackage and the accelerating trend toward heavier cars both suggest that the railroads need a prompt solution for the jumbo-car problem."

British Rail's Dr. Sparrow noted that in Britain there is now some move away from four-axle, 100-ton gross rail load vehicles in favor of two-axle 50-ton cars. While this is primarily a marketing strategy decision, BR feels that there is some threshold with respect to track deteriorating and higher maintenance after cars exceed 25 tons per axle. BR is not considering heavier individual axle loadings in any configuration.

Leo Hudson, vice president-traffic of Santa Fe, observed that the economics of car ownership are largely determined by the time cars spend off the owner's line. Santa Fe, he added, has a computer program to evaluate car acquisitions—balancing revenue per trip against cost per trip. He added that sometimes marketing strategy makes uneconomical cars desirable. While it has been difficult to justify new wood chip cars on Santa Fe, the investment has been made as a part of an over-all approach to paper-industry traffic.

Southern, according to R.S. Hamilton, executive vice president-marketing, also finds little return from wood chip traffic, but chose a 7,500-cubic-foot vehicle for the service as the lowest unit cost car—justifying the investment through a minimizing of the losses it sustains in handling the product.

Jumbo cars will wear out rail, Hamilton conceded, but the Southern has faced up to this and is prepared to run up its maintenance-of-way costs if this is a means of improving return. "Southern has deliberately the highest m/w ratio in the industry, but also the highest return on equity," he explained. He said that a penalty of possibly 3 cents per car mile for heavy cars makes possible the handling of traffic that would never be on the rails in the first place.

J.H. Brown, vice president-operations for Frisco, called for less of an all-out concentration on innovations for the future. "We are not looking enough at what we are doing right now," he cautioned. He cited the 18 mechanical delays of Frisco trains in a typical recent day—10 of these were the results of some sort of air brake malfunction. He said that Frisco's current spending of $650 per box car per year are far in excess of what was estimated in authorizing the original investment. "What we need is a real interdisciplinary approach to current problems and not taking a decade to come up with solutions." ■

Ingram analyzes the Northeast

In addition to his comments on rail technology at the Dresser Engineering Conference, Federal Railroad Administrator John W. Ingram discussed the quandary of the Northeastern railroads. The situation, he said, causes many congressmen to feel that the railroad industry "has already died." Congress, he added, does not appear in a mood to deal with basic rail legislation and this is one reason for FRA's proposal for an interim $85 million to sustain the Northeastern bankrupts until the beginning of 1975, an interval in which a viable regional rail network could be forged.

In trying to pinpoint the nature of the disease and using Penn Central as the patient, Ingram observed that some railroads make money with short, fast trains and others with long, slow trains while PC's operation is characterized by short, slow trains that tend to unprofitability. Such PC operation results in too high a labor content and the road's outmoded yard facilities and short districts make the uneconomical train configuration almost inevitable.

Ingram ticked off some of the popular reasons for PC's difficulties and noted that they put it at no disadvantage vis-a-vis its profitable neighbors. The average haul and average rate on PC both tend to be greater than those of nearby lines such as Southern, Chessie, and Norfolk & Western. Its empty car mileage is actually lower. PC, he continued, does not have many places where its agreements call for crew consists larger than those of other roads. None of these facts indicate that PC "is inherently doomed."

John W. Ingram

PC, he added, needs restructuring and new investment, but this should not mean "throwing money at them." He identified 40,000 of PC's 80,000 employees as surplus and said their relocation and re-employment is not so much a people problem as a "union problem." Ingram said that the condition of the PC car and locomotive fleet tends to require far more people in equipment maintenance than should be necessary.

The Administration position on the Northeast would be initially to design railroads that could stand "on their own feet" through elimination of excess plant and excess labor. After this design would come the financing, realizing full well that there can be no solution without money. Without a viable design, however, no one can know now how much money and this is the reason that the Administration opposes funding simultaneous with authorization of a restructuring study.

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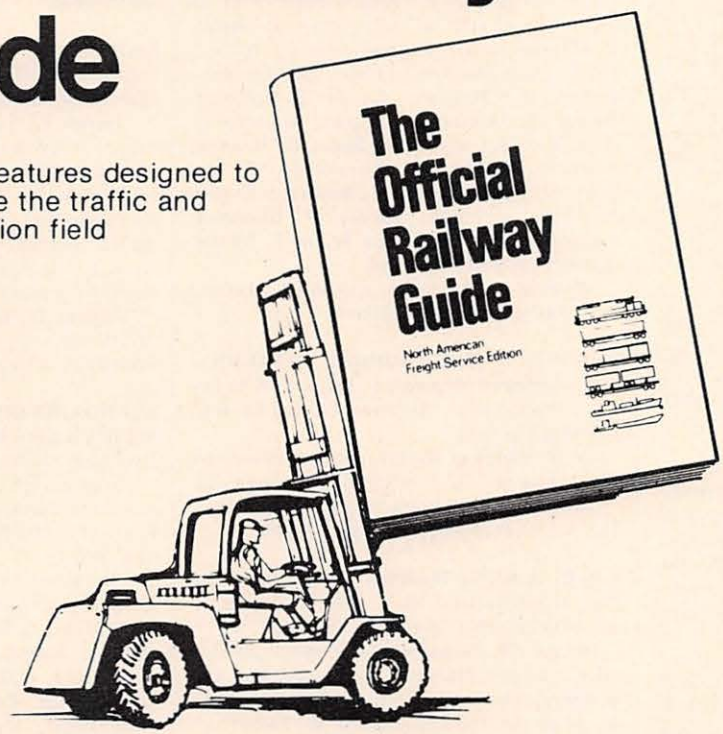

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Circle 13 on coupon page 57

People in the News

BESSEMER & LAKE ERIE.—**Richard J. Bajkowski,** supervisor pricing–general commodities, Pittsburgh, promoted to assistant manager of pricing–general commodities.

Richard B. Hood, assistant to president, secretary and treasurer, Pittsburgh, retired Aug. 31, after 20 years of railroad service. Mr. Hood was also secretary and treasurer, **Elgin, Joliet & Eastern** and the **Duluth, Missabe & Iron Range.**

BURLINGTON NORTHERN.—In the real estate development department. **Robert A. Juba** named to the newly created position of director, project development, St. Paul; **Lyle V. Bratsch,** general manager, Chicago/Twin Cities area, St. Paul; **Richard D. Larson,** general manager, Spokane/Seattle/Pacific Northwest area, Seattle; **William E. Pierce,** general manager, Denver/North Colorado area, Denver.

Theodore G. Schuster, associate general counsel, named assistant vice president of the newly created Urban Services Department.

CANADIAN NATIONAL.—**D. Hossack,** assistant general storekeeper, Pt. St. Charles, Que., appointed general storekeeper, succeeding **J.A.R. Petelle,** transferred to system headquarters. **R. Bisaillon,** regional supervisor, inventory control, St. Lawrence Region, succeeds Mr. Hossack.

R.W. Bowman, assistant general superintendent transportation (equipment distribution), Toronto, appointed assistant general superintendent transportation-operations, Great Lakes Region, Toronto. **L.J. Dennis,** superintendent transportation, Toronto, named assistant general superintendent transportation-administration, Toronto. **B.Buchanan,** transportation control officer, named superintendent, Toronto Yard. **A.C. LeBlanc,** industrial development officer-planning, appointed technical resource officer, Toronto.

CANADIAN PACIFIC.—**N.C. Pattullo** appointed master mechanic, Smiths Falls Division, Smiths Falls, Ont., replacing **R.L. Machin,** retired.

CHICAGO & NORTH WESTERN.—**F. William Zoellner** named manager–input/output controls, data processing services department. He was formerly supervisor of computer operations, **CPC International.**

William H. Clark named director–personnel resources, non-operating, and **Edward J. Kelleher,** director–personnel resources, operating. Mr. Clark was manager of career development, **C&NW,** and Mr. Kelleher, manager of personnel research, **Johnson Wax.**

DELAWARE & HUDSON.—**John A. Deans,** vice president-finance, secretary and treasurer, Albany, N.Y., retired Sept. 1 at his own request, after 47 years of service. **Ralph T. Murray,** assistant comptroller, elected secretary and treasurer. Other appointments: **Robert E. Sullivan,** deputy comptroller; **George E. Murphy,** assistant comptroller-revenue & car accounts; **James B. Vandyk,** assistant comptroller-disbursements & property accounts; **Norma V. Bowdy,** manager-corporate accounts; **Stanley F. Gecewicz,** manager-tax accounts; and **Frank T. Neutts,** manager-property accounts.

Michael J. Gilchrist appointed manager industrial development, Albany.

DENVER & RIO GRANDE WESTERN.—**A.R. Fjeldsted** appointed director of industrial development, Denver, succeeding **R.C. Cavness,** resigned.

M.W. Weldon, district manager, Stockton, Calif., retired July 1, after 48 years of service.

A.C. Agnew appointed manager-divisions, Denver, succeeding **P.J. Gamel,** retired.

ERIE LACKAWANNA.—**R.L. Downing,** general superintendent, Cleveland, appointed general manager-transportation there.

James W. Swisshelm appointed division sales manager, Marion, Ohio, succeeding **Leo E. Berry,** who retires Oct. 1, after more than 46 years of service. **Everett J. Talbot** appointed district sales manager, Albany.

NORFOLK SOUTHERN—**L.C. Kennedy,** assistant auditor freight accounts, appointed auditor freight accounts, Raleigh, N.C., succeeding **F.M. Snell,** now with the **Southern.**

PENN CENTRAL.—**Frank H. Jones,** superintendent, Pittsburgh Division, appointed superintendent, New Jersey Division, New York, succeeding **Charles B. Lockwood,** who resigned to join **Amtrak. G. Earl Williamson,** superintendent, Allegheny Division, Altoona, Pa., succeeds Mr. Jones at Pittsburgh. **Kenneth L. Lowe,** terminal superintendent, Conway, Pa., succeeds Mr. Williamson.

Ralph W. Smith has been appointed northwest sales manager, Chicago. Mr. Smith returns to PC after nine years with the **Lehigh Valley** at Chicago where he was assistant vice president-sales since 1969.

READING.—**Carl J. Winther, Jr.,** district claim agent, Philadelphia, promoted to assistant general claim agent and has been succeeded by **Charles H. Galt,** assistant district claim agent.

SANTA FE.—**Joseph W. Smith** named manager, tariff bureau, Chicago, to succeed **Clarence J. Moriarty,** retired.

Joseph W. Staab, Jr., area sales representative, Cleveland, appointed assistant to manager-traffic, Chicago.

Patrick R. O'Brien, manager of office administration, Freight Traffic Department, named assistant manager-pricing, San Francisco, to succeed **Donald R. Finley,** promoted to assistant manager-grain pricing, Chicago.

William D. Woodburn, regional manager-advertising, appointed production manager-advertising, Chicago.

SEABOARD COAST LINE-LOUISVILLE & NASHVILLE.—The following appointments have been made:

Augusta, Ga.: **J.H. Fryar, Jr.,** regional sales manager; **Carlton G. Cole, Jr.,** district sales manager; **L.H. Watson,** assistant district sales manager.

Anniston, Ala.: **C. Leon Methvin, Jr.,** district sales manger.

Buffalo, N.Y.: **G.A. Toth,** district sales manager; **Joseph Kestner,** general agent.

Chicago: **F.G. Almon, Jr.,** sales manager; **Lawrence E. Estill,** regional sales manager; **A.C. Engel,** regional intermodal manager; **James H. Vaughn,** division sales manger; **A.R. Voiss** and **J.P. Cushing,** district sales managers.

Jacksonville, Fla:: **R.D. Berry,** regional sales manager; **Lee H. Thames,** district sales manager; **V.C. Dowell,** district manager-industrial; **R.B. Hess,** district manager-automotive; **F.R. Edwards, Jr.,** district freight agent; **J.L. Kreis, H.H. Holland,** and **W.M. Stebbins,** general agents; **Jack M. Warren,** industrial engineer.

Kansas City: **H.J. Burns,** division sales manager; **J. Robert Williams,** district sales manager; **R.F. Hart,** general agent.

Miami, Fla.: **G.E. Huband,** regional sales manager; **J.E. Gallimore,** district sales manager; **G.A. LeGost,** district manager freight sales; **P.M. Averitte** and **M.S. Ellis, Jr.,** general agents.

Milwaukee, Wis.: **William L. Walters,** district sales manager; **R.D. Williams,** general agent.

Minneapolis, Minn.: **Richard J. Sherrod,** district sales manager; **R.E. Martin,** assistant district sales manager.

Orlando, Fla.: **F.H. Sanders,** regional sales manager; **C.W. Morton, Jr.,** assistant regional sales manager; **H.E. Whitaker,** district sales manager; **R.B. Elliott,** Florida perishable traffic agent; **H.A. Netsel** and **W.D. Pierce, Jr.,** general agents.

Portland, Ore.: **D.D. Fann** and **James A.**

(Continued on page 62)

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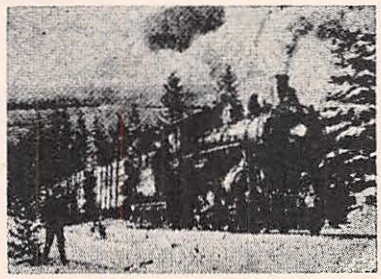

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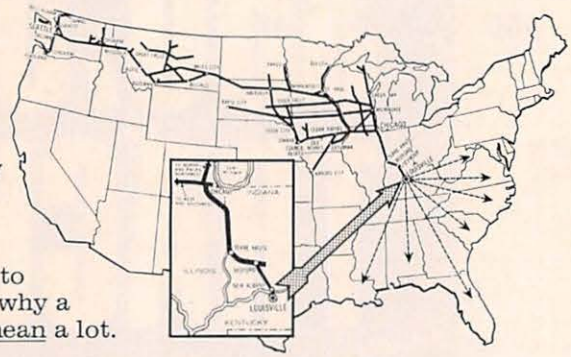
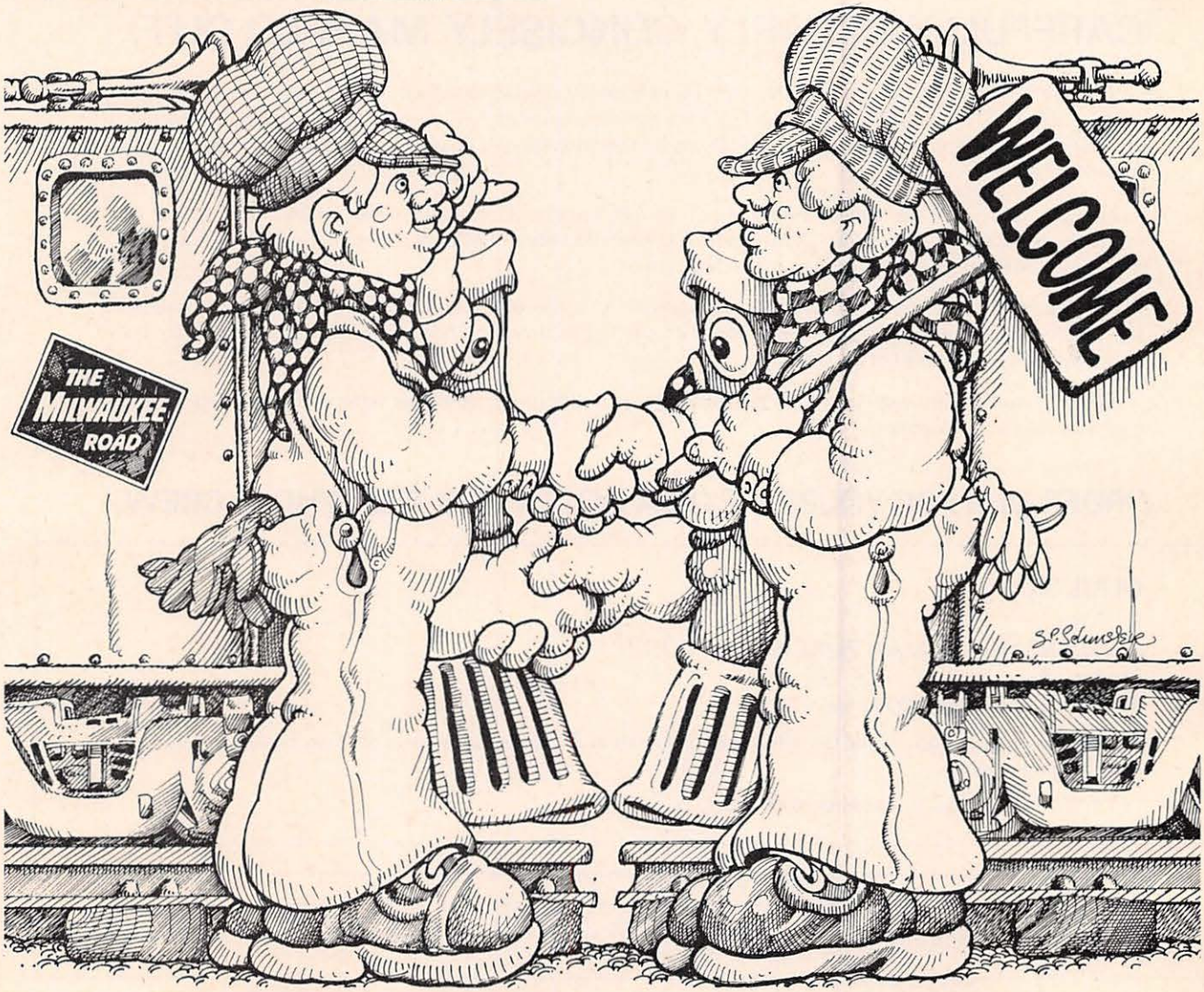
THE LOUISVILLE LINK-UP

The Milwaukee Road now operates its freight trains directly into Louisville. When you consider that we already operated all the way from the Pacific Northwest to southeastern Indiana, the 78 more miles to Louisville may not seem like a lot. But when you also consider that Louisville is an important Gateway to the South, you can see why a little bit farther does mean a lot.

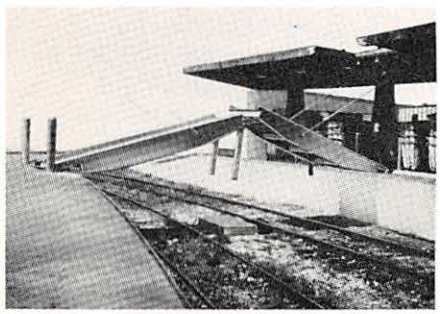


The Milwaukee Road is the only transcontinental railroad operating from the Pacific Northwest to this important Ohio River Gateway with a direct service route that by-passes Chicago. It eliminates terminal congestion and means more efficient, more direct rail service between the Northwest, the Midwest, and the Southeast.

All things considered, the Louisville Link-Up means a new way of shipping farther... faster... better. On the Milwaukee Road. America's resourceful railroad.



New Products Report



Lift bridges can go up or down in minutes

Two-span lift bridges built by Rampmaster Inc. can be raised or lowered in minutes by hand winch or electric hoist. They save time and money when used to bridge multiple railroad spurs, to connect buildings or loading docks. Two lifting eye brackets permit operating the two spans simultaneously, or either span independently. The lifting brackets are out of the way on the outside edge of the bridge. Folding, heavy-duty aluminum supports fold up with one span when the bridge is lifted and drop into place when the bridge is lowered to support the center of the bridge. The bridges are built of high-strength aluminum alloys, welded throughout. Standard bridges carry up to 21,000 lb safely. Higher capacity bridges are available. Decks are non-slip, diamond-pattern treadplate, open-type serrated aluminum or steel grating.

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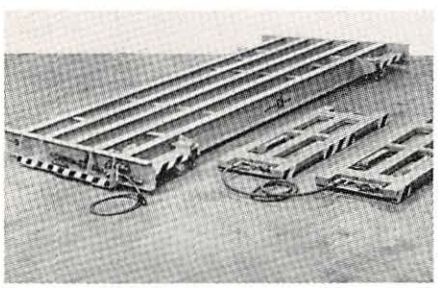

These air skids can move heavy loads of any type

A series of Airfloat Corp. air bearing platforms, made for moving any heavy load, is useful for relocating machinery, moving dies, large machines on assembly line, or for permanent attachment of often-moved machines. Two air bearings per skid support the load on a friction-free film of air at low ground pressure. Casters permit easy placement of skids under the load. Standard units are available in capacities from four to 43 tons per pair. Two or more skids can be used at one time. Units with 18-ton capacity and over include remote safety control for rapid braking. Special units are available for any capacity.

Circle 61 on reader service card

Remote fire control system needs minimum personnel

An advanced design system for controlling flammable liquid fires is available from National Foam System, Inc. Called Remote Fire Control System, it can protect hazards with minimum involvement of personnel. Included in the system are National Foam Monitors for directing Aer-O-Foam, as well as control equipment and devices customized to meet individual circumstances. Foam Monitors are available with capacities of 500, 1,000 and 1,500 gpm of foam solution. Among places suggested for use of the new system are tank car loading platforms.

The monitors are normally elevated on stanchions high enough for maximum coverage and may be controlled at panels at the bases of the towers, or remotely through National-developed desk top console control units which incorporate 8-position Joy Sticks for raising and lowering the monitors. (The National systems may be tied into closed-circuit television. It then would be theoretically possible to control a fire in Houston from New York City or from other extremely remote points.) Control centers also feature shrouded push-buttons for selecting straight streams or spray patterns. Monitors may be hydraulically or electrically operated.

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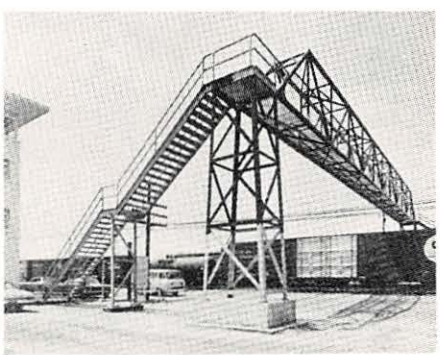

Pedestrian safety bridges can be put up overnight

Pedestrian safety bridges and pipeline crossovers custom-designed, pre-assembled and pre-finished for overnight erection are being produced by Industrial Steel Co. The steel bridges need only field-bolting at the site. They are avail-

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able in dozens of standard designs in addition to custom designs. Walkways can be of treated wood planking, raised pattern plate or non-slip grating. For added safety, metal siding or Plex-i-glas may be used to enclose walkways and approaches. Many color options, as well as circular canopies and dome rain covers, may be incorporated in the design. Industrial Steel's flexible design, engineering, manufacturing and installation service can be adapted to customer requirements. It will provide materials only, or complete design-through installation, or any part or combination of the complete service.

Circle 63 on reader service card

Telephone shelter boxes are of steel and fiberglass

Western-Cullen telephone shelter boxes are designed to provide convenience to train crews and maximum protection for telephones and components. Rugged steel and fiberglass construction offers users protective housings that are virtually indestructible. Design and construction permit easy mounting of different types of telephones and various components. The boxes are available in a variety of sizes and can be mounted on 4-in.-diameter pipe poles or the larger-diameter wooden line poles. All steel boxes are available with special built-in snap shut switch key lock.

Circle 64 on reader service card

Fax unit sends a page in 4 or 6 minutes

The Xerox Telecopier 410 facsimile automatically answers calls, starts the sending and receiving process between the two points and hangs up when transmission is complete. The 410 operates at either four or six minutes a page, maintaining complete compatibility with all other Telecopier units. An unattended unit in the receive mode can adjust automatically to the speed of a sending device.

Circle 65 on reader service card

NEW LITERATURE

REFRIGERATION. Thermo King Corp., transport refrigeration manufacturer, has prepared a handy, spiral-bound, pocket-size booklet with unit-by-unit data about its complete equipment line. It includes photographs and installation illustrations with unit dimensions.

Circle 70 on reader service card

CARGO TIEDOWNS. Tridair Industries, Brownline Division, has issued a fully illustrated catalog detailing a new line of cargo tiedowns and restraint hardware for the surface transportation industry.

Circle 71 on reader service card

ADHESIVES AND COATINGS. A 5-page bulletin from the Foster Division of Amchem Products, Inc., describes Bondseal adhesives and sealants for the transportation industry.

Circle 72 on reader service card

FACT FINDER. A 3-in. by 4-in. "Transportation Fact Finder for Massachusetts" has been completed for free distribution by the commonwealth's Department of Public Works. It summarizes statistics for all modes of transportation in Massachusetts. New editions are to be published annually.

Circle 73 on reader service card

CARD MILEAGE ALLOWANCES. A brochure from Union Tank Car Co. describes a computerized auditing system which offers tank car lessees a simplified way to match individual shipments with mileage allowances earned from railroads. The system is called MATCH, for mileage allowance trip check.

Circle 74 on reader service card

LOCOMOTIVE BATTERIES. A new 8-page brochure introduces C&D Batteries' 16-cell unitized diesel locomotive batteries. It details construction methods permitting users to install the unitized batteries in 75% less time than conventional batteries.

Circle 75 on reader service card

SILICONES AND MASONRY. General Electric's Silicone Products Department has prepared a 4-page bulletin to explain the instrumental role of silicones in prolonging the life of masonry.

Circle 76 on reader service card

TRANSFORMERS. Catalog 95-1 describes air-cooled transformers, which are designed expressly for use in railway signaling. These General Railway Signal transformers are available in a wide range of sizes, with capacities ranging from 5 to 1500 volt-amperes.

Circle 77 on reader service card

FACSIMILE. A four-page folder describes the new Muirhead Mercury IV mobile facsimile system that transmits "hard copy"—photographs, documents, maps, orders, waybills, handwritten messages etc.—over existing 2-way mobile radio channels.

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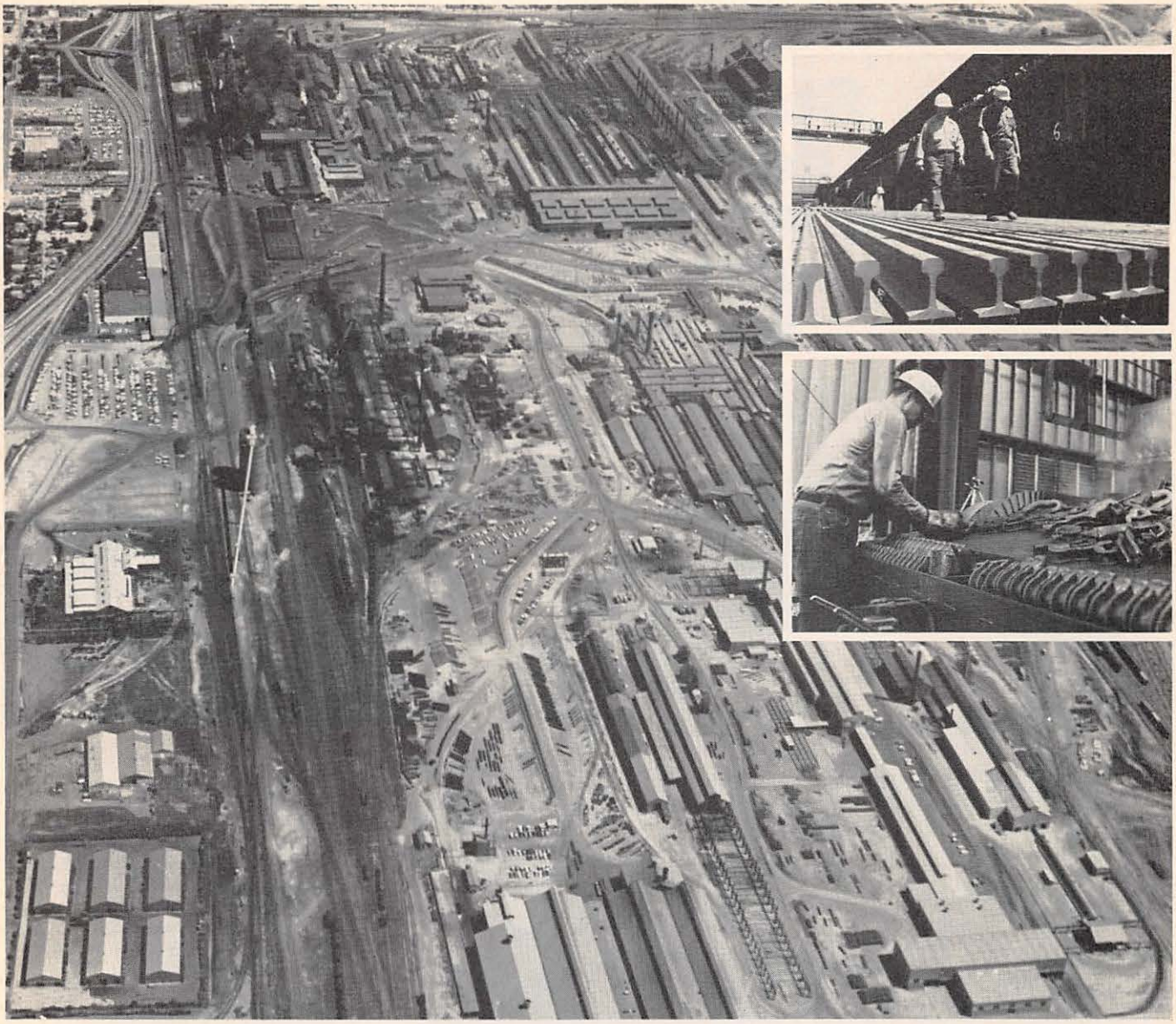


This is where the world's best quality rails are made.

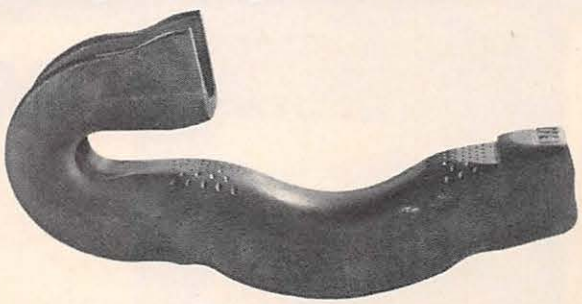
And now the best quality rail anchors, too.

All from the same high quality steel.

The new CF&I Hi-Guard™ rail anchors. Designed and produced for today's higher tonnages and speeds. With superior holding power, tie-bearing capability and stability under load. Plus *re-usable* holding power.

Get the full details from CF&I – the quality steel company that makes products with the railroads in mind.

We serve you right.

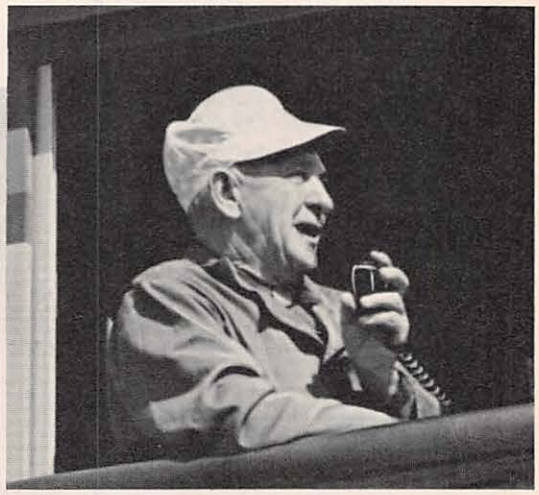


CF&I Steel Corporation
Pueblo, Colorado
A subsidiary of Crane Co.

*Patent pending

Circle 14 on coupon page 57

Stacy Tripp will deliver your great cargo and come rollin' home for more.



Today's locomotives are bigger and more complex than ever before.

It takes a very specialized professional, like Stacy Tripp, to jump up front and run one through all kinds of weather.

Stacy not only knows locomotives and their capabilities.

He's continually tested on all phases of updated railroad equipment, safety regulations, his engineering skills and mechanical knowledge.

In short, he's up to the big job of getting millions of dollars worth of cargo to and from terminals, safely and on time.

Stacy Tripp is typical of our hard-driving engineers.

Just one of the twenty-seven thousand hard-driving railroad people at Union Pacific.

Because of them and the job they do, we're not just another railroad.

We're the railroad that can handle it.

We can handle it.

the Union Pacific railroad people

UNION PACIFIC

Market Outlook

CARLOADINGS

Loadings of revenue freight in the week ended Sept. 1 totaled 555,547 cars, according to the Association of American Railroads. This was an increase of 7,507 cars, or 1.4%, compared with the previous week, and an increase of 11,069 cars, or 2.0%, compared with the corresponding week last year. Ton-miles generated by carloadings in the week ended Sept. 1 are estimated at 16.9 billion, an increase of 7.5% above the corresponding week of 1972.

REVENUE FREIGHT CARLOADINGS

Commodity	Sept. 1 week	Aug. 25 week
Grain	32,438	33,884
Farm products	7,683	7,978
Metallic ores	44,914	46,288
Coal	96,365	92,530
Crushed stone, gravel & sand	33,491	32,988
Nonmetallic minerals	17,403	16,906
Grain mill products	21,137	20,769
Food and kindred products	23,740	23,827
Primary forest products	25,035	26,044
Lumber & wood products (except furniture)	18,199	17,541
Pulp, paper & allied products	24,113	23,984
Chemicals & allied products	27,833	25,854
Petroleum products	9,271	9,476
Stone, clay & glass products	22,180	22,939
Coke	8,264	8,083
Metals & products	28,240	26,329
Motor vehicles & equipment	21,532	20,602
Waste & scrap materials	15,705	15,546
Forwarder & shipper assn. traffic	10,975	10,538
All other carloads	66,473	65,444
LCL traffic	556	523
Total cars loaded	**555,547**	**548,073**
Cumulative total, 35 weeks	1973	1972
	18,240,599	**17,270,769**
Estimated revenue ton-miles (billions) 35 weeks	563.3	515.4

PIGGYBACK LOADINGS

U.S. piggyback loadings for the week ended Aug. 25 totaled 30,644 cars (14.1% above the corresponding week last year) and 53,691 trailers or containers (up 17.3% from 1972). Cumulative volume for the first 34 weeks of 1973 is 985,427 cars (up 17.4% from last year) and 1,704,026 trailers or containers (up 21.0% from 1972).

IN CANADA

7 days ending	Tons of Revenue Freight	Cumulative Totals
Aug. 21, 1973	3,392,775	150,046,044
Aug. 21, 1972	3,349,712	128,664,465

● *Amtrak.*—Ordered 40 additional 3,000-hp. diesel-electric locomotives from Electro-Motive.

● *Boston & Maine.*—Leased 12 2,000-hp diesel locomotive units from Radnor Associates Ltd. The units, to be built by Electro-Motive, are scheduled for delivery next December.

● *Burlington Northern.*—Ordered nine aci scanners from ACI Systems Corp. for installation in yards at Cicero, Ill., Lincoln, Neb., and Minot, N.D.

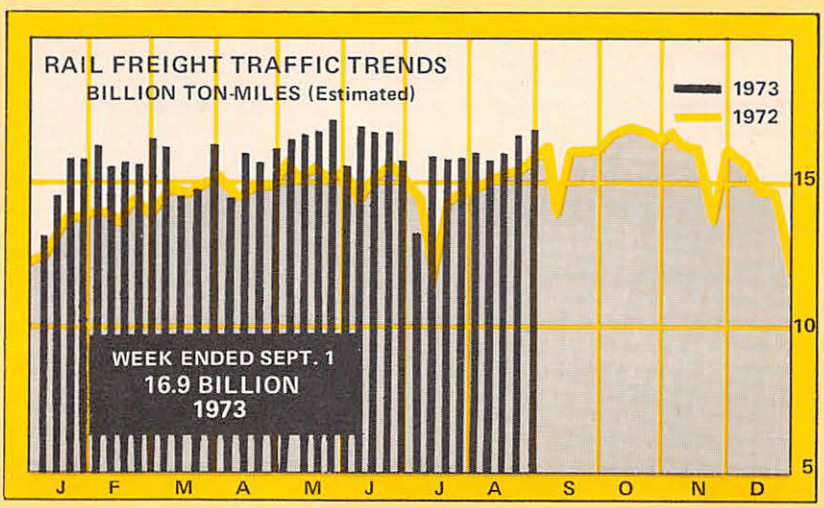
● *National of Mexico.*—Ordered 94 diesel-electric locomotives from General Electric at an approximate cost of $35 million. Included are 49 U36C 3,600-hp units (20 for passenger service; 29 for heavy freight service), and 45 Ul8B 1,800-hp units for mixed services. Delivery is scheduled for 1974.

● *Penn Central.*—Is arranging to acquire by lease 40 machines, costing about $1.8 million, to be used by maintenance of way forces. PC trustees were authorized by the reorganization court to lease the equipment from Plasser American Corp. The equipment includes nine switch tampers and 31 track smoothers. Also, PC is equipping its Conway Yard, near Pittsburgh, with four aci scanners supplied by ACI Systems Corp.

● *Pittsburg & Shawmut.*—Ordered 200 100-ton-capacity open-top hopper cars for hauling coal from Greenville Stel Car.

● *Southeastern Pennsylvania Transportation Authority.*—General Railway Signal will furnish, as an initial lot, 34 sets of continuous inductive, three-speed train control, including cab indicator control, to General Electric for installation on cars for SEPTA.

● *Washington Metropolitan Area Transit Authority.*—Electrical connectors developed at Bendix Corp.'s Electrical Components Division will prodive the connecting link between the first 30 train units being built for WMATA by Rohr Industries.



Source: Association of American Railroads

(Continued from page 54)

Phillips, district sales managers.

San Francisco: **George M. Reynolds,** regional sales manager; **W.E. Lord,** division sales manager; **C.C. Parris,** general agent.

Savannah, Ga.: **J.R. Purvis,** regional sales manager; **S.W. Rowan** and **Robert M. Hendley,** district sales managers; **R.R. Boykin,** district freight agent; **R.D. Sanders,** general agent.

St. Louis, Mo.: **Reese G. McGee,** division sales manager; **M.T. Sanders,** district sales manager; **F.G. Foss,** general agent.

Tampa, Fla.: **K.H. Clark,** assistant regional sales manager; **James E. Roberts,** and **J.C. Fesperman,** district sales managers; **J.W. Futch, Jr.,** and **R.E. Gibson,** general agents; **P.L. Harper,** sales manager.

SOO LINE.—Joseph C. Roth named to the newly created position of manager of purchasing and materials, Minneapolis. **Raymond H. Worts,** chief clerk, purchasing department, promoted to purchasing agent. **Thomas J. Ruth,** manager of purchasing, retired after 35 years of service.

UNION PACIFIC.—Robert H. Brenneman, assistant superintendent communications, named superintendent communications, Omaha, succeeding **Carl O. Jett,** who retired recently after 27 years' service.

SUPPLY TRADE

Jack E. Smith has been appointed president, Philadelphia Division, **SKF Industries, Inc.** Mr. Smith was formerly operations manager, Marlin-Rockwell, division of TRW, Inc.

E. Wayne Kojsza has been appointed manager-Cobra shoe engineering, **Westinghouse Air Brake Division** of **WABCO.** Mr. Kojsza was formerly manager-special braking projects. **James R. Raspet** has been appointed manager-administration, International Marketing Department. **Esmet Walley** has been named senior staff engineer, International Marketing.

Sol Frisch has been elected a vice president of **General American Transportation Co.** Mr. Frisch is also a vice president of and member of the Executive Committee of American Steamship Co., a GATX subsidiary.

William H. Eggers has been appointed sales engineer, Hose Division, **Ohio Rubber Co.,** at Grand Rapids, Mich., covering states east of the Mississippi River. Mr. Eggers formerly held sales management positions with Dayco Corp. and Gates Rubber Co.

William D. Adams has been appointed general sales manager, **Eberhard Manufacturing Co.,** Cleveland.

ACI Systems Corp. has opened a new data center and corporate offices at 16950 Westview Avenue, South Holland, Ill. The new data center and ACIS' complete library of programs are being offered to small railroads and other transportation companies as an economical and cost-effective alternative to in-house computer systems.

A.L. Schneider has been promoted to president of **Canadian Timken, Ltd.,** St. Thomas, Ont., Canada. He was formerly manager, Bearing Plant, Canton, Ohio.

James L. Karrigan, general manager-international operations, **Cardwell Westinghouse Co.,** Chicago, has been appointed vice president-international operations, succeeding **James R. Legge,** who retired June 30.

Paul L. Wheeler, former signal engineer, **Chessie System,** has been appointed vice president and general manager, Minneapolis Division, **Safetran Systems Corp.,** succeeding **Frank Youngwerth,** retired. **Leland G. Phillips,** manager, South Central Region, has been appointed vice president of sales and service, Louisville, Ky., succeeding **Howard C. Palmer,** appointed vice president corporate development, Louisville. **Charles E. Lewis,** former supervisor of track, **Penn Central,** has joined Safetran as assistant to the vice president and general manager, Louisville Division. **Gene K. Adams** named sales manager, Central Region, Chicago. **Charles E. Shepherd** appointed sales manager, South Central Region, Chicago. **David C. Ferryman** named sales engineer, South Central Region, St. Louis, and **Robert F. Thompson** appointed sales engineer, North Central Region, Minneapolis.

INDUSTRIAL TRAFFIC

George C. Bush, assistant general traffic manager, **Youngstown Sheet & Tube Co.,** Youngstown, Ohio, has been appointed general traffic manager.

Thomas E. Nast has been appointed traffic manager, **CF&I Steel Corp.,** Pueblo, Colo. Mr. Nast was formerly traffic representative, Skelly Oil Co., Tulsa, Okla.

Andrew M. Balunek, manager-traffic and interplant trucking, **General Electric Co.,** Schenectady, N.Y., has been appointed manager-transportation services there. **Robert J. Hasken** has been appointed consultant-special services, Bridgeport, Conn. Mr. Hasken was formerly specialist-distribution planning, Nuclear Energy Division, San Jose, Calif.

William Hargrove has been promoted to vice president of the newly formed Distribution Services Division, **Curtice-Burns, Inc.,** Rochester, N.Y.

A.J. Bartholomew has been appointed manager of transportation, **Revere Copper & Bross Incorporated,** Rome, N.Y.

Earle A. Compton, Jr., director of procurement and transportation, **Scott Paper Co.,** Philadelphia, has been appointed staff vice president in charge of corporate procurement and transportation.

Daniel R. Burek has been named to the newly created position of manager-transportation and distribution, **Zurn Industries, Inc.,** Erie, Pa.

Robert T. Speid has been appointed assistant traffic manager, **Rexene Polymers Division, Dart Industries,** Paramus, N.J.

Robert P. Hopkins has been appointed manager, Distribution Department-Chemicals Division, **Rohm & Haas Co.,** Philadelphia. He was formerly product manager, Industrial Coatings section.

Dennis A. Robertson has been appointed general traffic manager, Corporate Physical Distribution Department, **Hooker Chemicals & Plastics Group,** Niagara Falls, N.Y. Mr. Robertson was formerly director of pricing-forest products, **Burlington Northern,** St. Paul, Minn.

William H. Irvine has been promoted to the newly created position of manager-logistics, Physical Distribution Department, **Hooker Chemical Corp.,** Niagara Falls, N.Y. **Karl W. Von Holten, Jr.** has been promoted to manager-physical distribution planning.

Raymond E. Downs, formerly with the **Illinois Central Gulf,** has been appointed supervisor of rates and routes, corporate traffic, **J I Case Co.,** Racine, Wis.

Edward F. Hodnett has been named manager-traffic service analysis, Distribution Department, **J.C. Penney. Peter J. Brock** has been appointed consolidation manager.

John E. Myers, transportation manager-administrative services, **Glidden-Durkee,** Cleveland, Ohio, has taken early retirement to engage in commercial and industrial real estate in the Cleveland area.

Calendar

The **Southeastern Association of State Highway and Transportation Officials** will hold its annual convention Oct. 7-10 in the Arlington Hotel, Hot Springs, Ark.

The third annual **Regulatory Information Systems Conference** will be held this year at the Chase-Park Plaza Hotel, St. Louis, Oct. 16-19.

"Electric Vehicles—When, Where, If" will be the topic of a panel discussion at the Oct. 11 meeting of the **Industry Applications Society** in Milwaukee, Wis.

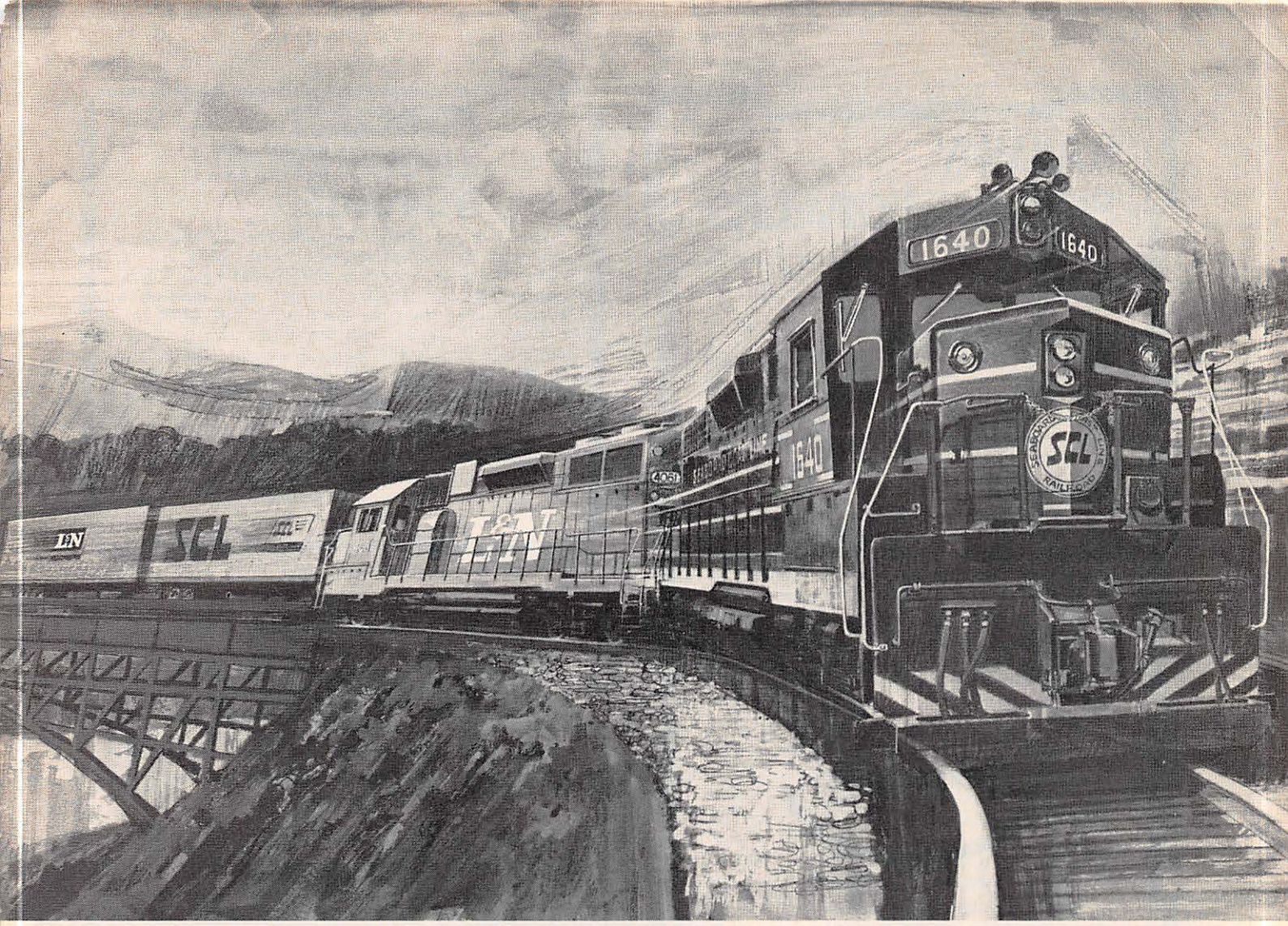
The Railroad Section of the **National Safety Council** will conduct a three-day series of meetings in Chicago's LaSalle Hotel beginning Oct. 30, in conjunction with the 61st **National Safety Congress.** Alan S. Boyd, president and chief executive officer of the Illinois Central Gulf, will be the keynote speaker.

"Material Handling—A Vital Part of the Manufacturing Process" is the theme of a Nov. 28-30 conference to be co-sponsored by the Society of Manufacturing Engineers and the Material Handling Institute. The conference will be at the Dearborn (Mich.) Inn.

OBITUARY

Rhodes C. Berrey, 62, vice president-transportation and physical distribution, **United States Gypsum Co.,** Chicago, died Aug. 29.

David O. Mathews, 70, retured president, **Chicago & Eastern Illinois,** died Sept. 2 in Danville, Ill.



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Viewpoint

"Grand design" or "grand illusion"?

A good part of railroad history—at least since the 1880s—could be written by a student, with good eyesight and not easily bored, who chose to dig deeply enough into the archives of the Interstate Commerce Commission. He would find both the good and the bad, regarding railroads and regarding the ICC itself. Now, as of late 1973, he would find a document which—in both sorrow and anger—has eloquence that cannot be denied. The document is Rock Island's statement of exceptions to the recommended report and order in the famous, or infamous, Rock Island case.

Rock Island sums up just about everything in its opening sentence: "The Rock Island proceedings, nine years having elapsed since the merger applications were filed and five years since the hearings were supposedly closed, unquestionably stand as the most serious indictment of the efficacy of administrative process in the entire history of this nation."

That's strong language. But under the circumstances, it is not too strong. Nor is Rock Island's description of the output of the administrative law judge who heard the case as "an incredible maze of unworkable and unsought conditions which defeat any possibility of this merger [with Union Pacific] being effected, unless reversed by the Commission." Nor is Rock Island's statement of its present condition: "Rock Island's financial condition has steadily worsened to a point where its ability to avoid receivership is now on a month-to-month basis. In short, Rock Island's often-expressed fear that mere delay of a Commission decision would render this entire proceeding moot—a result which would surely rank as the greatest debacle in Commission history—is now dangerously close to reality."

In fairness, it should be pointed out that the Rock Island case was a complex one, involving just about every railroad in western territory. There were conflicting bids for RI, from UP and Chicago & North Western. Southern Pacific and Santa Fe became deeply involved in proposals for splitting up RI. In self-defense, every road even remotely involved demanded to be heard, in most cases at length.

But, that "in fairness" comment does not in any way serve as an excuse for the grandiose scheme for re-making the railroad map of the West which the administrative law judge came up with. This plan has become known to some as the "grand design." It could better be labeled, as RI points out, the "grand illusion."

What happens next? Quite possibly, the failure of Rock Island—which winds up its argument with a plea that the ICC omit the oral-argument step and get promptly to issuance of a final report which, hopefully, would prevent the "disastrous result" of a bankruptcy.

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And what does all this prove? It proves, maybe, that what this industry needs—and what those regulating it need—is more doers and fewer philosophers. This is not to knock the cerebral process. It is to say, however, that there comes a time when all the agonizing cerebration has to cease and action has to begin. It is also to say that, with specific reference to the "grand design," there is a temptation which many are susceptible to and which must be resisted, at whatever cost to the psyche. And that is the temptation to play God.

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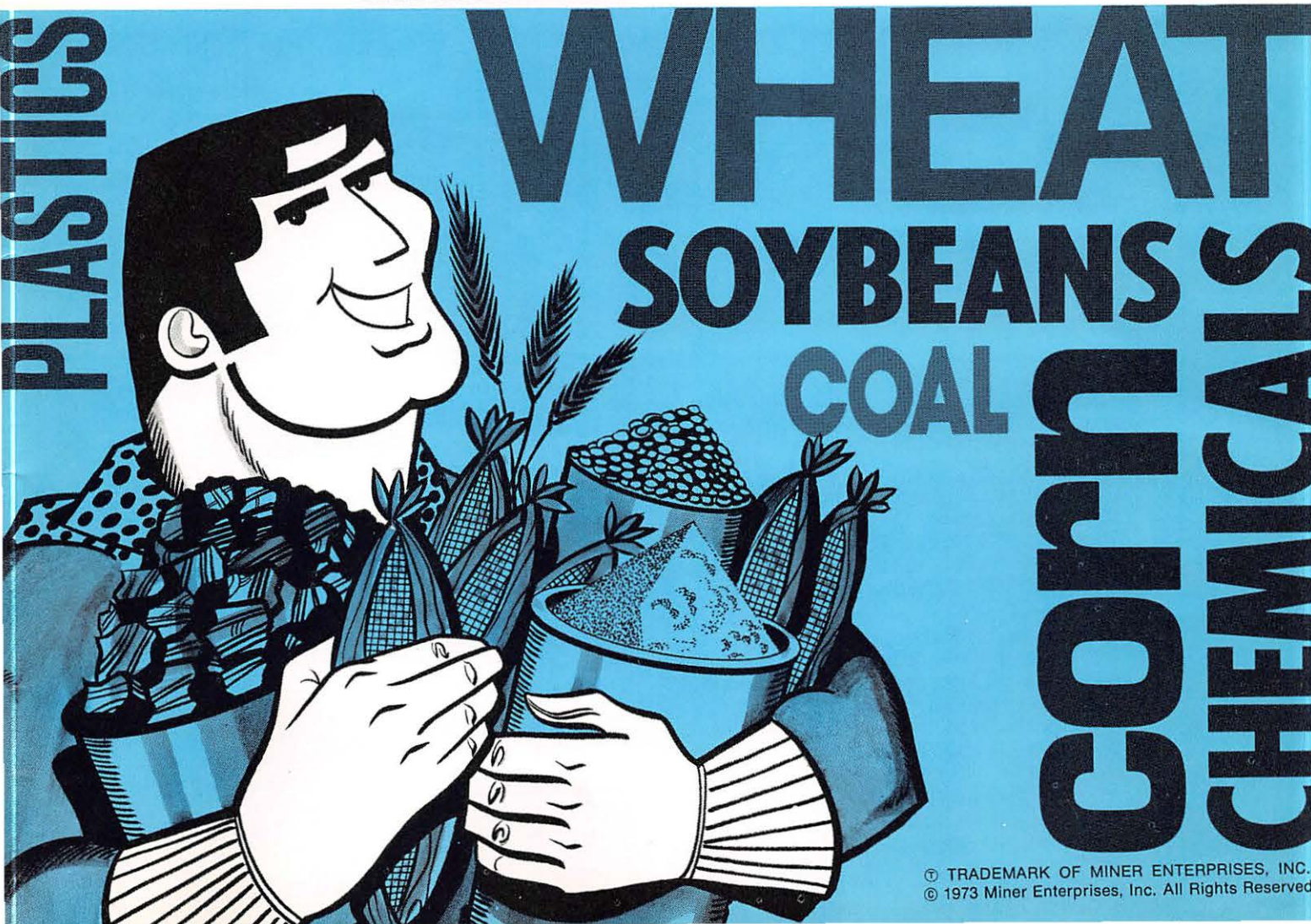

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